

Keep

R. New

Sa

VOL. 2, No. 9

SEPTEMBER

1915

THREE DAY LOAN

GENERAL SCIENCE

THE
**AGRICULTURAL
GAZETTE**
OF CANADA

WORK OF THE WOMEN'S INSTITUTES
EXPERIMENTS WITH COMMERCIAL FERTILIZERS
CO-OPERATIVE WOOL MARKETING
DEMONSTRATION CONTESTS

S
I
A 274



DEPARTMENT OF AGRICULTURE
OTTAWA, CANADA

TO SUBSCRIBERS:

PLEASE PRESERVE CAREFULLY FOR REFERENCE; AN INDEX WILL BE PUBLISHED WHEN THE VOLUME IS COMPLETE.

TO THE PRESS:

FREELY USE ALL OR ANY OF THE INFORMATION CONTAINED IN THIS MAGAZINE.

TO AGRICULTURAL OFFICIALS:

PLEASE FORWARD PROMPTLY TO THE AGRICULTURAL GAZETTE ANNOUNCEMENTS, APPOINTMENTS, RESOLUTIONS AND OFFICIAL REPORTS.

MANUSCRIPT FOR THE FORTHCOMING NUMBER SHOULD REACH THE EDITOR NOT LATER THAN THE 10th OF THE PRECEDING MONTH.

VOL. 2, No. 9



September, 1915

DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE

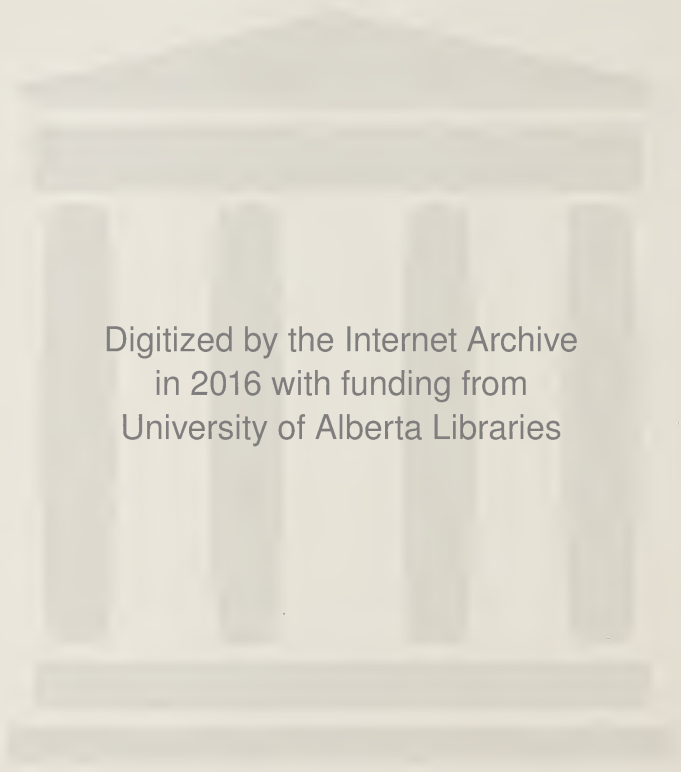
The Agricultural Gazette of Canada

EDITOR: J. B. SPENCER, B.S.A.

Issued by direction of
THE HONOURABLE MARTIN BURRELL
Minister of Agriculture

OTTAWA
GOVERNMENT PRINTING BUREAU

1915



Digitized by the Internet Archive
in 2016 with funding from
University of Alberta Libraries

CONTENTS

The Woman on the Farm.....	PAGE 825
----------------------------	-------------

PART I

THE DOMINION DEPARTMENT OF AGRICULTURE

The Dominion Experimental Farms:—	
The Division of Chemistry:	
Notes on Fertilizer Experiments Conducted on Farms and Stations, 1915, at Fredericton, N.B., Charlottetown, P.E.I., Kentville, N.S., Cape Rouge, Que. and Agassiz, B.C., by Frank T. Shutt.....	826
The Division of Animal Husbandry:	
The Marking of Live Stock, by E. S. Archibald.....	829
The Division of Botany:	
The Wilting of Tomatoes and Potatoes, by W. A. McCubbin.....	831
The Live Stock Branch:—	
Preliminary Statement with Respect to Assistance Extended to Wool Growers' Associations in Grading and Classifying Wool for Market, by T. Reg. Arkell.....	832
Statement of Rams and Boars Taken over from The Ontario Department of Agriculture, under the Policy of Loaning Pure Bred Sires to Farmers' Societies, by T. Reg. Arkell.....	834
The Wool Exhibit, by T. Reg. Arkell.....	835
The Health of Animals Branch:—	
The Contagious Diseases Act Amended.....	836
Dressed Hogs Importation.....	836
Importations from Minnesota Prohibited.....	837
The Entomological Branch:—	
The House Sparrow, by Dr. C. Gordon Hewitt.....	837
Notes.....	839
The Fruit Branch:—	
A Tour of the Western Provinces.....	839
The Seed Branch:—	
Seed Inspection Summary, by E. D. Eddy.....	842
The Dairy and Cold Storage Branch:—	
A New Phase of Fruit Marketing Problems, by Edwin Smith.....	844

PART II

PROVINCIAL DEPARTMENTS OF AGRICULTURE

Work of The Women's Institutes:—	
Prince Edward Island.....	846
Nova Scotia, by Miss Jennie A. Fraser.....	846
New Brunswick, by Miss Hazel E. Winter.....	847
Quebec, by Miss Katherine Fisher.....	850
Ontario, by George A. Putnam.....	851
Manitoba, by S. T. Newton.....	854
Saskatchewan.....	855
University of Saskatchewan, by Miss Abbie De Lury.....	858
Alberta, by Miss A. Carlyle.....	860
Experiments with Commercial Fertilizers:—	
Nova Scotia, by John M. Trueman.....	861
New Brunswick, by J. B. Durost.....	862
Macdonald College:	
The Chemistry Department, by H. S. Hammond.....	863
The Cereal Husbandry Department, by James Murray.....	864
Ontario.....	864
Vineland Station, by F. M. Clement.....	867
Manitoba, by F. G. Churchill.....	868
Saskatchewan, by Prof. John Bracken.....	868
British Columbia.....	871

Co-operative Wool Marketing:—	
Manitoba.....	872
Saskatchewan.....	872
Alberta, by E. L. Richardson.....	873
Demonstration Contests:—	
Prince Edward Island, by Theodore Ross.....	875
Nova Scotia, by M. Cumming.....	875
Quebec, by J. A. Grenier.....	875
Alberta, by H. A. Craig.....	876
Prince Edward Island:—	
Notes.....	877
Nova Scotia:—	
County Agricultural Representative Value, by M. Cumming.....	877
Quebec:—	
Alfalfa P:ots, by M. Liguori.....	879
Macdonald College:—	
Experiments on the Control of the Bud Moth, by E. Melville Duporte.....	880
Ontario:—	
Horticultural Experimental Station, by F. M. Clement.....	882
Farmers' Automobile Tour.....	882
Clover Seed and other Crop Prospects in New Ontario, by T. G. Raynor.....	884
Notes from District Representatives.....	885
Manitoba:—	
District Representatives at Brandon.....	889
Saskatchewan:—	
Agricultural Legislation.....	890
Better Farming Trains.....	892
Weed Eradication and other Matters.....	896
Serving The Empire.....	896
Pure Bred Stock Sale.....	897
Alberta:—	
Experimental Station Exhibit.....	897

PART III

RURAL SCIENCE

The Teaching of Agriculture and what it signifies.....	898
Consolidation of Rural Schools:—	
The Movement in Quebec, by J. C. Sutherland.....	900
Little Progress in Ontario.....	901
The New Agricultural School at Sussex, N.B.....	901
Manitoba—	
Short Course for Clergymen.....	904

PART IV

SPECIAL CONTRIBUTIONS, REPORTS OF AGRICULTURAL ORGANIZATIONS, NOTES AND PUBLICATIONS

Second Honour Roll, Dominion Department of Agriculture.....	907
School Consolidation in the South.....	907
Hackney Registration Rules.....	908
Registrations to August, 1915.....	908
Dog Records Nationalized.....	908
Free Entry of Dogs to United States.....	909
The Voice of the Optimist.....	909
Extension Work in the United States.....	909
Agricultural Work for Women.....	911
List of Suggested books for Farmers' Libraries.....	912
New Publications:—	
The Dominion Department of Agriculture.....	909
The Provincial Departments of Agriculture.....	917
Miscellaneous.....	919
Notes.....	920
Index to Periodical Literature.....	924

The Agricultural Gazette

OF CANADA

VOL. II

SEPTEMBER, 1915

No. 9

THE AGRICULTURAL GAZETTE of Canada is published monthly, in English and in French, by the Dominion Department of Agriculture. It is not intended for general circulation. A limited number of copies, however, are available to subscribers at \$1.00 per annum, or 10 cents per copy.

Subscriptions should be forwarded to the Editor, Agricultural Gazette, Ottawa.

THE WOMAN ON THE FARM

A few years ago the Secretary of the United States Department of Agriculture addressed a set of questions to six hundred representative farm women selected throughout the various states of the Union. The questions were designed, when answered, to indicate the true conditions under which the wives of farmers lived and did their daily duties. The replies in the main revealed a sorry state of affairs, showing that while farmers themselves as a rule enjoyed the advantages of improved machinery, the society of neighbours, the intercourse that comes with public functions, and many other desirable conditions, their long suffering helpmates, in many instances, were compelled to struggle along with few of these advantages. This was the condition found to exist throughout the United States, and it is possible that had the investigation included Canada, the picture would not have been greatly modified. Canadian wives and mothers have doubtless suffered many disabilities, and it is only within the past few years that a genuine effort has been made to relieve the monotony and in many cases the drudgery of their lives. To this end Women's Institutes, Home Makers' Clubs and other organizations have been formed and are working an extraordinary revolution not only on behalf of their own members but on the whole of rural life. In this issue there are brought together an account of the activities of those organizations throughout Canada, from which the workers in the various provinces may learn many things from each other.

To carry on this work during the present year there has been set apart upwards of sixty thousand dollars of public money, about half of which is provided under THE AGRICULTURAL INSTRUCTION ACT, the remainder being voted by the provincial legislatures. THE AGRICULTURAL INSTRUCTION ACT was calculated to provide relief to the rural women, and when introducing the measure in the House of Commons the Minister of Agriculture said, "The particular form such assistance may take . . . might well include the valuable educational work carried on by means of demonstration trains, the training of teachers in nature study, and the invaluable work of domestic science concerned with the women and girls of the community, whose influence will always constitute one of the most potent factors in solving the problems we are considering."

PART I

Dominion Department of Agriculture

INFORMATION SUPPLIED BY OFFICIALS OF THE VARIOUS
BRANCHES REPRESENTED

THE DOMINION EXPERIMENTAL FARMS

THE DIVISION OF CHEMISTRY

NOTES ON FERTILIZER EXPERIMENTS CONDUCTED ON FARMS AND
STATIONS, 1915, AT FREDERICTON, N.B., KENTVILLE, N.S., CHAR-
LOTTETOWN, P.E.I., CAP ROUGE, QUE., AND AGASSIZ, B.C.

BY FRANK T. SHUTT, M.A., DOMINION CHEMIST

1. *Systematic Scheme for Ascertaining the Minimum Fertilizer Requirements of Crops*

THE scheme includes an experiment with some ten mixtures, containing nitrogen, phosphoric acid and potash in varying proportions. These several mixtures are applied in three amounts or rates of application, to ascertain the minimum dressing for the maximum profit. This should give valuable information as to the most desirable formula to be used and the most profitable amounts to apply.

Plots for nitrogen, phosphoric acid and potash, applied singly and in combination of twos, *e.g.*, nitrogen and phosphoric acid, nitrogen and potash, potash and phosphoric acid, are included in the series, as well as a

number to test the respective merits of different forms of nitrogenous and phosphatic fertilizers.

The plans for this work comprise two experiments, which are designated as A and B.

Observations are to be made throughout a three-year rotation, potatoes, first year; grain seeded to clover and timothy, second year; and hay, third year.

EXPERIMENT A

To ascertain the most desirable formula and the amount of fertilizer (rate of application) giving the largest profit.

FERTILIZER FORMULÆ

PLOT	Nitrogen per cent	Phosphoric Acid per cent	Potash per cent
I.....	20	0	0 (sulphate of ammonia)
II.....	5	11	0
III.....	0	16	0 (acid phosphate)
IV.....	0	11.5	6
V.....	0	0	50 (sulphate of potash)
VI.....	10	0	12
VII.....	6	4.5	2.4
VIII.....	4	9	2.4
IX.....	2	13.7	2.4
X.....	2	9	4.8
XI.....	3	6.5	10.5
XII.....	7	8.7	9.6
XIII.....	5	8.6	4.5
XIV.....	3	9	3.6
XV.....	4	8.4	6.4
XVI.....	4	9	5
XVII.....	4	9	10
XVIII.....	2.5	11.5	3

Formula Nos. I to VI are applied only at one rate per acre, while Nos. VII to XVIII, are applied at three rates per acre.

The fertilizer mixture XVII B (formula 4:9:10) is being used with manure to ascertain the supplemental value of fertilizer as follows:

Plot A.	Fertilizer,	750 lb. manure,	0 in 2nd and 3rd years.
" B.	"	750 "	175 lb. fertilizer 3rd year.
" C.	"	375 "	0 " " "
" D.	"	375 "	175 " " "
" E.	No fertilizer,	750 "	
" F.	"	375 "	
" G.	Check,	No fertilizer,	No manure.
" H.	"	"	"
" I.	"	"	"

EXPERIMENT B

The series contains fifteen plots and is designed to ascertain the most profitable and cheapest forms of nitrogen, phosphoric acid and potash to employ.

In this experiment we compare Nitrate of Soda with Sulphate of Ammonia; and Superphosphate with Basic Slag and Bone Meal. The scheme is as follows:

FORMS OF NITROGEN AND PHOSPHORIC ACID. AMOUNTS PER ACRE

	Nitrate of Soda	Sulphate of Ammonia	Acid Phosphate	Basic Slag	Bone	
I. A.....	133		200	200		150
B.....	100		200	200		150
C.....	66		200	200		150
II. A.....		100	200	200		150
B.....		75	200	200		150
C.....		50	200	200		150
III. A.....	100	75	400			150
B.....	100	75	300			150
C.....	100	75	200			150
IV. A.....	100	75		400		150
B.....	100	75		300		150
C.....	100	75		200		150
V. A.....	100	75			350	150
B.....	100	75			263	150
C.....	100	75			175	150

SEAWEED FERTILIZER INVESTIGATION

2. The following experiments with a view of ascertaining the fertilizing value of dried ground seaweed are being conducted at—Ottawa, Ont., Kentville, N. S., Fredericton, N. B., Nappan, N. S. and Charlottetown, P.E.I.

The crops under experiment are: corn, potatoes, turnips, and oats and peas.

SCHEME:	Per Acre
a. Dried ground seaweed.....	1,000 lb.
b. Seaweed.....	1,000 "
Superphosphate.....	400 "
c. Superphosphate.....	400 "
d. Muriate of potash.....	200 "
e. Superphosphate.....	400 "
Muriate of potash.....	200 "
f. Nitrate of soda.....	125 "
Muriate of potash.....	200 "
g. Nitrate of soda.....	125 "
Muriate of potash.....	200 "
Superphosphate.....	400 "

The plots are 1-40 acre.

SCHEME FOR EXPERIMENTAL WORK
WITH DOG-FISH SCRAP

3. Experiments to ascertain the fertilizing value of Dog-fish Scrap are being conducted at Fredericton, N.B., and Kentville, N.S., as follows:

On each plot, with the exception of G., H. and I (see scheme following) the equivalent of 500 lb. of a 4:8:10 fertilizer is applied per acre, that is, Nitrogen 20 lb., Phosphoric acid 40 lb., Potash 50 lb., per acre. Plots G and H receive applications of the fertilizer at the rate of 750 lb. per acre. Plot I the fertilizer is applied at the rate of 1,000 lb. per acre. Each plot is in duplicate; the plots are 1-10 acre each.

The rotation is, first year, potatoes, second year, grain, third year, clover. In the first year the application is at the rate given in the tabulated scheme. In the second and third years the application is at the rate of one-fourth the weight of each mixture per acre, applied on one half of each plot, the other half of the plot being left unfertilized. This will

allow the opportunity of noting the value of continued yearly applications.

SCHEME OF PLOTS

A. Check plot.....	No fertilizer	
B. Am. sulphate.....	50 lb	
Nitrate of soda.....	62 1/2 "	
Acid phosphate.....	266 1/2 "	per acre
Muriate of potash..	100 "	
C. Am. sulphate.....	50 "	
Nitrate of soda.....	62 1/2 "	
Basic slag.....	266 1/2 "	per acre
Muriate of potash..	100 "	
D. Fish scrap.....	215 "	
Acid phosphate.....	233 1/2 "	per acre
Muriate of potash..	100 "	
E. Fish scrap.....	215 "	
Basic slag.....	233 1/2 "	per acre
Muriate of potash..	100 "	
F. Am. sulphate.....	25 "	
Nitrate of soda.....	31 "	
Fish scrap.....	108 "	per acre
Basic slag.....	116 "	
Acid phosphate.....	117 "	
Muriate of potash..	100 "	
G. Am. sulphate.....	75 "	
Nitrate of soda.....	94 "	
Basic slag.....	400 "	per acre
Muriate of potash..	150 "	
H. Fish scrap.....	323 "	
Basic slag.....	350 "	
Muriate of potash..	150 "	
I. Am. sulphate.....	50 "	
Nitrate of soda.....	62 "	
Fish scrap.....	216 "	
Basic slag.....	232 "	
Acid phosphate.....	234 "	
Muriate of potash..	200 "	

ENRICHMENT OF SOILS THROUGH THE
GROWTH OF LEGUMES C.E.F. OTTAWA

4. To ascertain how far soil fertility may be maintained and increased by the growth of legumes, without manure or fertilizer.

The series consists of 5 plots of one-fifth of an acre each, as follows:

FIRST YEAR

No. 1.	Barley and timothy.
" 2.	" " alfalfa.
" 3.	" " alsike.
" 4.	" " common red clover.
" 5.	" " alone.

Yield of barley, seed and straw, obtained.

SECOND YEAR

Plots 1 to 4 inclusive, are devoted to seed production, weight of fodder being noted. Plot 5, will be sown with barley alone.

THIRD YEAR

The series of 5 plots are divided and sown with (a) roots and (b) corn.

THE DIVISION OF ANIMAL HUSBANDRY

THE MARKING OF LIVE STOCK

BY E. S. ARCHIBALD, B.A., B.S.A., DOMINION ANIMAL HUSBANDMAN

THE importance of marking individual animals in the herd and flock is evident. Animals which are on pasture, particularly on the Crown Lands, where the owners do not see them at least once per day, are apt to be mixed with the neighbours' cattle and in any event so change in their appearance during the few months on pasture that it often leads to confusion. Numerous cases of theft of unmarked animals have been brought to our attention in recent months. This would have been eliminated had the animals been properly marked.

The writer knows from personal experience that a comparatively large percentage of Canadian farmers take so little interest in their live stock that they cannot readily tell the individuals and the breeding of their herds, this even applying to many farmers who have pure-bred cattle. Although proper marking will not correct this lack of interest, with the accompanying lack of intelligent work, nevertheless it will guarantee the knowledge of the breeding of the various animals and the possibility of retaining the heifers from only the best producing stock for the up-building of the future herds.

METHODS OF MARKING

There are four methods, more or less commonly practised, of marking live stock, namely, branding on the body, nicking of the ears, use of ear tags, and use of the tattoo in the ear.

Branding on the body is still practised in many districts and is very satisfactory. However, for show purposes the brand is more or less unsightly and with valuable breeding animals which might be sold to other individuals or companies this

large brand which it is impossible to obliterate is very unsatisfactory.

The nicking or slitting of the ears of individuals has been practised from time to time with practically all classes of live stock to designate both the owner and the breeding of the individual. This, too, has its objection, as it is unsightly in valuable breeding stock and is not sufficiently complete in its marking.

The use of the ear tag is most commonly practised where mixed farming is commonly carried on. The ear tag may have stamped thereon the name of the owner and the individual herd name or number of the animal and the registration number in the case of pure-bred animals. This is very complete so far as information is concerned. The great trouble with the ear tag is that it may be lost or in the case of theft may be easily removed and replaced by another. Aside from this, of the various types of ear tags used, the writer has not discovered one which may not be torn out, leaving a very badly mutilated ear. In the hands of careless, indifferent users the ear tag may disfigure the ear by not being properly placed therein, by using the wrong size of tag, or by allowing festers to form around a tag which is too small or which has not been treated in a cleanly manner. Hence the fact that many of our largest breeders of live stock are looking for some better system of marking cattle and other classes of stock.

THE EAR TATTOO

The tattooing of the ears of animals has been tried for several years in various countries, and with greater or less success. It consists in punching numerous small holes in the skin in the inner part of the ear

and rubbing into the perforations a special tattoo oil which is indelible. The needles which are used to make these perforations are set in small lead blocks in the form of letters or numbers as required, and these lead blocks slip into the jaws of a specially made punch. The marker, that is, the punch, with three letters or figures is valued at \$2 and extra letters or figures are valued at from 30 to 35 cents each. The black tattoo oil per bottle, sufficient to mark 500 ears, is valued at 50 cents and the red oil at 60 cents per bottle. Hence an outfit sufficient to mark the name of the owner and designate the herd number of the individual would cost about \$4 for 500 head and for animals over 500 head only one-tenth of a cent per head for tattoo oil. Comparing this with the average price for labels, it is seen that it is really much more economical. As a rule the charges for ear tags in lots of 500, with name and number stamped thereon, are \$7 for the small size for sheep and hogs, \$10 for the average size for cattle, and \$12 for the extra large cattle size.

METHOD OF TATTOOING

The method which has been adopted for the tattooing of cattle, sheep, and swine on the Central Experimental Farm is as follows: The part of the ear where it is desired to make the necessary marks is smeared lightly with the tattoo oil. The numbers are then slipped into the jaws of the marker and the ear is punched where smeared. The oil is then rubbed well into the punctures with the thumb or fore-finger. It takes three to five days for the ear to heal and then the brand will show out clear and distinct in the ear. On white, pink, or yellow skin the black oil is most satisfactory, showing out jet black, while on brown or black skin the black oil does not show out so distinctly, but is discernible as a blue line. The red tattoo oil on the brown and black ears has given slightly better satisfaction than the black oil.

After using this marker for over a year on practically all classes and ages of stock, our success might be summarized as follows:—

In tattooing very young calves, pigs, or lambs, the size of the letters and figures increases with the size of the ear and at two years of age the letters and figures are more than double the original size. It is often advisable to re-tattoo over the old figures at that age. This objection of course applies equally to the use of tags, as larger tags must be substituted for small tags for the best success; hence the tattooing is really superior in this respect.

Letters and figures tattooed in different coloured ears of various classes of stock have remained very clear and easily distinguished for over a year and show no signs of becoming obliterated.

In two instances, probably due to lack of cleanliness, tiny warts appeared over each of the punctures and instead of a tattooed black or blue line there are the letters and figures outlined in tiny warts. This trouble includes such a very small percentage that they may be considered exceptional instances.

The main point in the process of tattooing is to be sure that the tattoo needles are settled well into the ear and the tattoo oil rubbed in thoroughly. In a coarse ear of open texture, often found in cattle and commonly found in swine, special precaution must be taken in this respect, else the letters will not be discernible in the course of two or three months.

METHOD OF LETTERING

A simple method of lettering which was adopted is as follows: In the right ear the letters "C E F" were stamped to designate the ownership of the animal. In the left ear the herd number was stamped. Starting with the year 1910 the letter "A" was used to designate the year, after which the herd number was added. For exam-

ple, "E47" in the ear of a Holstein heifer means that in the herd record books her number is 47 and that she was born in the year 1914. This

method is very simple and, with variations to suit the needs of private individuals, may be very satisfactorily used.

THE DIVISION OF BOTANY

THE WILTING OF TOMATOES AND POTATOES

BY W. A. MCCUBBIN, ASSISTANT IN CHARGE OF ST. CATHARINES FIELD LABORATORY

THE abnormally wet weather, which prevailed throughout the Niagara peninsula, as well as in other parts of Ontario, during the month of August, was the cause of a large amount of injury to garden and field crops, but particularly to potatoes, tomatoes and beans. Other crops have suffered to a lesser extent and even weeds are affected.

In the case of beans, it is noticed that those in low places, or in furrows where water lies for some time, stop growing and their lower leaves turn yellow and drop off. Potatoes and tomatoes in similar situations have their leaves burned and blackened, and these finally fall, leaving bare stalks. In milder cases, there has occurred a pronounced wilting of the leaves, especially in tomatoes in sodden soils. These symptoms, which have been the subject of inquiry many times recently, are really cases of drought. It seems strange to use this term where the land in which plants are growing is reeking with moisture, but it is an actual fact that such plants are suffering from lack of water. It is found that their roots are more or less rotten, and, in many cases, the unpleasant odour which accompanies decomposing vegetable material is plainly evident. This rotting of the

roots is probably due to the enormous multiplication in the warm wet earth of soil organisms which are ordinarily few and harmless, but which, when numerous, are able to bring about a rotting of the unhealthy root tissue. An examination of these water-logged plants shows a darkening of the sap-conducting tissue for some distance above the ground, and under the microscope, the sap tubes are found to be clogged, undoubtedly because of the toxic substances ascending from the rotten root below. Very little water can pass upwards through these clogged tubes, so that there arises this curious condition of affairs—the soil is saturated with water and the tops die from drought.

The percentage of damage arising to potatoes and tomatoes cannot yet be estimated. If, as now seems likely, drier conditions prevail for September, those plants which are not too seriously injured will recover. In tomatoes, however, the crop is already much later than usual, and this set-back is bound to tell on the crop from the affected vines. It is very fortunate that the potatoes are still quite free from Late Blight, which, by reason of the wet weather, might have become epidemic among the tops, and, thereafter, brought about a widespread rot of the tubers in the ground.

THE LIVE STOCK BRANCH

PRELIMINARY STATEMENT WITH RESPECT TO ASSISTANCE EXTENDED TO WOOL GROWERS' ASSOCIATIONS IN GRADING AND CLASSIFYING WOOL FOR MARKET

BY T. REG. ARKELL, B.S.A., B.Sc.

GRADING operations were pursued by the Live Stock Branch this summer to cover a greatly increased area and to include much larger quantities of wool than in previous

tion of wool for a cooperative society leads to a friendly rivalry amongst members. Each member endeavors to prepare a product which will be included in a grade higher than that of his neighbour. This has a most



WOOL GRADING DEMONSTRATION, AGRICULTURAL HALL, SUMMERSIDE, P.E.I.,
JUNE 24TH, 1915

years. Wool Growers' Associations were organized and applications received from every province except British Columbia, from which preliminary steps have already been taken to form an organisation to receive assistance from the branch in this respect this year. Classifica-

wholesome effect in tending to create an improvement in the entire clip of the association. In fact, this feature is already most apparent with those associations which were organised last year and had their wool graded.

Results, as outlined in the tabulated reports, show not only the benefits to

be gained through cooperative effort in marketing, but also the greater financial returns derived from the presentation to the trade of a clean, classified article. Grading was pursued under the direction of the wool experts of the Branch and the wool was disposed of through avenues devised and controlled solely by members of the different societies.

All the work of grading is not yet completed. Therefore, full returns cannot be reported at this time. In fact, this report excludes 200,000 pounds of wool already graded, all data pertaining thereto being not yet compiled, and 50,000 pounds being graded at the present time. A further statement will be issued shortly, when a more detailed explanation of the nature of the work will be made.

PARTIAL GRADING STATEMENT

EASTERN DOMESTIC

GRADE	Weight	Approximate Shrinkage
	Lb.	Per Cent
Fine medium combing.....	1,809 $\frac{1}{2}$	44.
Medium combing.....	7,958 $\frac{1}{4}$	44.
Low medium combing.....	5,761	35.5
Coarse combing.....	6,061 $\frac{1}{2}$	49.5
Lustre combing.....	14,806 $\frac{1}{4}$	33.
Fine medium cloth.....	200 $\frac{1}{2}$	45.
Medium cloth.....	214 $\frac{1}{2}$	38.
Rejections.....	870 $\frac{1}{2}$	40.
Gray and black.....	606 $\frac{1}{4}$	34.
Locks and pieces.....	51 $\frac{1}{2}$	60.
Tags.....	623	60.
Washed.....	202 $\frac{3}{4}$	10.

WESTERN DOMESTIC

GRADE	Weight	Approximate Shrinkage
	Lb.	Per Cent
Fine combing.....	3,246	59.5
Fine medium combing.....	13,225	51.3
Medium combing.....	68,480	49.1
Low Medium combing.....	44,896	40.9
Low medium combing (washed).....	131	24.
Coarse combing.....	6,565	36.4
Lustre combing.....	6,589	44.5
Lustre combing (washed).....	554	22.
Fine cloth.....	3,015	68.
Fine medium cloth.....	6,257	60.6
Medium cloth.....	13,214	53.7
Low medium cloth.....	2,468	49.5
Rejections.....	3,094	56.6
Gray and black.....	1,664	35.
Locks and pieces.....	645	60.
Tags.....	1,341	70.
Pulled.....	190	43.

RANGE

GRADE	Weight	Approximate Shrinkage
	Lb.	Per Cent
Medium staple.....	101	38.
Low staple.....	908	36.5
Fine cloth.....	7,701	59.
Medium cloth.....	5,153	49.
Gray and black.....	22	35.
Locks and pieces.....	60	60.

NAME OF ASSOCIATION	Amount of Wool	Average Price per Pound
	Lb.	Cents
*Prince Edward Island.....	5,496 $\frac{1}{4}$	32.50
Antigonish, N.S.....	12,271	33.
*Sussex and Studholme, N.B.....	1,103 $\frac{3}{4}$	35.
Manitoulin, Ont.....	20,295	26.
Manitoba.....	64,739	26.8
Elkhorn, Mar.....	10,635	26.8
*Calgary.....	11,665	27.77
Lacombe.....	24,134	27.
Vermilion.....	29,642	27.
Pincher Creek.....	35,916	25.
*Edmonton.....	12,788	27.

*Partial reports only. Statements from provinces and districts not represented in the foregoing but where grading operations were pursued by the Branch will be given at a later date.

STATEMENT OF RAMS AND BOARS TAKEN OVER FROM THE ONTARIO DEPARTMENT OF AGRICULTURE UNDER THE POLICY OF LOANING PURE-BRED SIRES TO FARMERS' SOCIETIES

BY T. REG. ARKELL, B.S.A., B.Sc.

PURE-BRED sires which had previously been loaned to live stock improvement associations by the Ontario Department of Agriculture before this policy was inaugurated by the Dominion Government were this summer by mutual consent purchased by the Federal Live Stock Branch, which will now assume control of these associations. In so far as rams and boars are concerned, four Berkshire boars and sixteen rams (thirteen Shropshires and three Leicesters) were involved. These are distributed among the following associations:

Iron Bridge Association, secretary, J. C. Gardiner, Iron Bridge.....	1 Berkshire boar
Ryerson Association, secretary, J. F. Nelles, Doe Lake.....	1 Berkshire boar
Blezard Valley Association, secretary, Teles Bonin, Blezard Valley...	1 Berkshire boar
	3 Shropshire rams
Hanmer-Capreol Association, secretary, P. Taillon, Hanmer.....	1 Berkshire boar
	1 Shropshire ram
Powassan Association, W. G. Oldfield, Powassan.....	5 Shropshire rams
Hincks Association, secretary, A. Brechin, Box 41, Bruce Mines.....	4 Shropshire rams
Storng Association, C. F. Vanwicklin, Sundridge.....	3 Leicester rams

THE WOOL EXHIBIT

BY T. REG. ARKELL, B.S.A., B.Sc.

THE Wool Exhibit of the Sheep and Goat Division has again been presented at the Canadian National Exhibition, Toronto, and will be on hand at many of the eastern fairs this fall. Last year it was displayed at the fairs in Western Canada. It has been greatly enlarged and many new features have been added. In fact, it fills double the space it occupied last year.

The object of the exhibit is to explain fully the various classifications and grades in this and other countries and to show how wool may be handled in such a way as to secure the best advantages to both the producer and manufacturer. In order to command the highest market prices, wools should be presented in a carefully rolled and packed condition and should contain as little foreign matter as possible. Carelessness in the preparation of wool soon results in an injury to its reputation upon the market, which may take years of perfect handling to remedy. The aim of every sheep raiser should be to produce as low a shrinking wool as is compatible with the breed type, that is, to keep it as free as possible from all extraneous material as straw, burrs, sand and other harmful things of this nature.

These features form an important part of the exhibit. It contains samples of wool in both the greasy and scoured condition, showing the injurious effects of using insoluble paints for marking purposes. Ordinary paint will not scour out and consequently must be cut from the wool, which shortens the staple, creates a loss of wool and wastes the time of the sorter in the mill. Fleeces are also exhibited tied with binder (sisal) twine showing how the sisal fibre may become incorporated in the wool, pass through the combing process and, since it does not take the dye, appear as a pronounced blemish

in the cloth, which, if the defect covers a wide area, may mean a serious loss to the manufacturer. The injurious effects of shearing wool while wet, or permitting it to become damp while in storage, are also shown.

Most of the important classes of Australian, New Zealand, South American and South African wools are shown. Of foreign and domestic wools used in the manufacture of carpets there is a very complete collection. Four large cases contain representative fleeces of the most prominent breeds of Canadian sheep, and smaller samples of each are displayed in such a manner as to give a clear idea of their character and staple. This is supplemented by a comprehensive display of English wools covering virtually every grade in that country. A study of these samples will help to give beginners an opportunity to compare the wool of the different breeds, and thus become acquainted with the average weight of fleece and quality of wool obtained from each. Comparison is also made of the British, American and Canadian methods of classification, but especial emphasis is placed upon the domestic product. One large case contains fleeces of Canadian wool representing the different classes as they are graded for the market.

Processes of woollen and worsted manufacture are illustrated by samples representing the intermediate products from the wool in the grease to the finished cloth. This serves to give the public an idea of the types of wool entering into the different classes of fabrics. Although the living specimens of sheep are not shown, a number of enlarged photographs of typical representatives of the different breeds as well as entire flocks are included in the exhibit.

THE HEALTH OF ANIMALS BRANCH

THE CONTAGIOUS DISEASES ACT AMENDMENT

THE Order under "The Animal Contagious Diseases Act," of date the 9th day of May, 1915, as amended by orders of date the 15th of May, 12th of June and 22nd of July, 1915, is hereby further amended as follows:—

"Hay or straw used in packing merchandise from the United States may be admitted, provided the shipment is accompanied by the affidavit of the shipper, or of a Bureau of Animal Industry Inspector, stating that the said hay or straw was harvested and stored in an area that has not been under federal quarantine for foot and mouth disease, or else that the said hay or straw has been fumigated with formaldehyde, as required by the Bureau of Animal Industry.

"This regulation does not apply to shipments originating in any of the states now removed from foot and mouth regulations.

"Transit of live poultry through Canada from one United States point to another is permitted in car lots when the shipment is accompanied by the affidavit of the owner or shipper that the poultry are the product of a state not under federal quarantine. Cars to pass the inspection of officers at the boundary as to sanitary condition and freedom from hay, straw or chaff."

Dated at Ottawa, this fifth day of August, 1915.

(Sgd.) GEO F. O'HALLORAN,
Deputy Minister of Agriculture.

DRESSED HOGS IMPORTATION

THE Order under "The Animal Contagious Diseases Act," of date the 9th of May, 1915, as amended by Orders of date the 15th of May, 12th of June, 22nd of July and 5th of August, 1915, is hereby further amended as follows:—

"The importation of dressed hogs from the United States of America is permitted under the following conditions:—

"Hogs must have been killed and dressed in an establishment under federal inspection.

"Carcasses must have been singed and feet, head and viscera removed, including kidneys, tenderloins and leaf lard.

"Car lots only will be admitted.

"Cars are to be sealed by a Bureau of Animal Industry Inspector, con-

signed to a Canadian establishment under inspection and received there with unbroken seal. Seals are to be broken by the Inspector of the Health of Animals Branch stationed at the establishment.

"Importers of dressed hogs under this amendment will be required to export every portion of the hogs so imported, with the exception of such small trimmings as are rendered, or lean trimmings, which must be cooked before being offered for sale.

"After unloading, the cars are to be cleansed and disinfected to the satisfaction of the inspector at the expense of the importer."

Dated at Ottawa, this twentieth day of August, 1915.

(Sgd.) GEO. F. O'HALLORAN,
Deputy Minister of Agriculture.

IMPORTATIONS FROM MINNESOTA PROHIBITED

UNDER the provisions of "The Animal Contagious Diseases Act," for a period of three months from this date, the importation or introduction into Canada, of animals, or of the flesh, hides, wool, hoofs, horns or other parts of animals, or of hay, straw, fodder or manure from the State of Minnesota, United

States of America, is hereby prohibited, with the special reservations provided under the Order of May 9th, 1915.

Dated at Ottawa, this 13th day of August, 1915.

(Sgd.) GEO. F. O'HALLORAN,
Deputy Minister of Agriculture.

THE ENTOMOLOGICAL BRANCH

THE HOUSE SPARROW

BY DR. C. GORDON HEWITT, D.Sc., DOMINION ENTOMOLOGIST, OTTAWA

IT is to be regretted that this bird commonly called the English sparrow should not receive the popular name in this country by which it is known in the country from which it was introduced, which name I have given it in this article, as its deplorable habits make it undeserving of a name to which it has really no title as it is as common in continental Europe as in England.

The question of the economic status of the house sparrow and what our attitude should be towards it frequently agitates the minds of those who are endeavouring to encourage and protect our native birds, a movement which, most fortunately for the country, is gradually making headway. Accordingly it is the object of this article to bring together in a few words the information we have concerning the habits of this bird and the opinions expressed are based on such facts and on my own observations made in England and Canada.

The case for the prosecution is as follows: There are many characteristics of the sparrow that render it noxious as a bird. Its general characteristics are an aggressive nature, and destructive and unsightly habits. Its aggressive nature is perhaps its

worst feature. As a result of this characteristic and of its numerical abundance it has reduced in many parts of the country the numbers of some of our most useful and pleasing native birds such as purple martins, tree swallows, barn swallows, bluebirds and wrens, which birds have somewhat similar nesting habits. It appropriates the nesting places of these birds, their eggs and young are destroyed and in their place we have a bird with no song but with a quarrelsome disposition and an appropriately noisy vocabulary. In the place of native birds of pleasing song and plumage and of habits that are almost entirely insectivorous we have a bird which is destructive both in the small home gardens, where it destroys buds and flowers, uproots the seedling peas and eats off the tender young seedling vegetables, and in the fields outside the towns and cities where, when the grain is ripening, the young birds in such great numbers as indicate the unusual procreative powers of this species, assist their parents and other relatives in destroying more ears than are necessary to satisfy even their enormous appetites. A number of reports have reached the department concerning the great destruction of uncut and cut grain.

An examination of 522 house sparrow stomachs made by the Biological Survey of the United States Department of Agriculture resulted as follows: 47 contained noxious insects, 50 contained beneficial insects and 31 contained insects of little or no economic importance. The report of the investigation shows conclusively that "aside from the destruction of weed seed, there is very little to be said in the sparrow's favour."

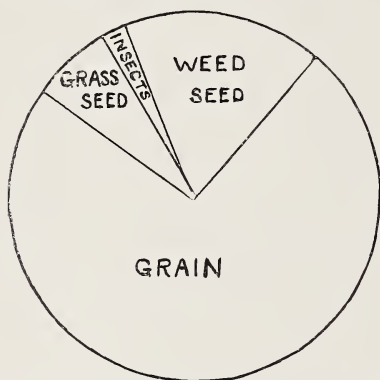


DIAGRAM SHOWING PROPORTION OF FOOD OF HOUSE SPARROW

(From Judd, U. S. Department of Agriculture)

For the defence it may be said that it consumes weed seed and I have sometimes observed them so feeding, but it must be admitted that it was at a time of year when there was little else for them. Our own native species of sparrows are much more efficient and habitual destroyers of weed seeds than this undesirable alien. Another fact in its favour is that during the nesting period the house sparrow destroys insects upon which the young are largely fed. In England, Collinge recently showed that in a single day, one hundred nestling sparrows require nearly 2,000 insects for food in fruit growing districts and about one-third that quantity in suburban districts. The insect-eating habit impresses one less in this country in view of the fact that the house sparrow has the habit of driving away more valuable native in-

sectivorous birds that have not its evil habits at other times of the year.

The evidence is overwhelmingly against this immigrant. In England, the necessity of its destruction is indicated by the number of "sparrow clubs" that are in existence. This hostile attitude is almost unanimously supported, although its title of "avian rat" is held by a few to be not fully justified; nevertheless, the best that has been said in its favour is that its economic status is doubtful. But in North America there is in my opinion no doubt about its economic status. *It is a pest of the first order and should be treated as such*, however much we may be moved by our natural feelings to sympathise with its fate during our severe winters.

It is an example of the danger of introducing, without the most careful consideration, an animal into a new environment. We have many similar instances, one of the most notable of which is the introduction of the skylark into Australia; in England its economic status never demands an inquiry, but it has become a serious pest in Australia following its introduction to a new environment.

When it is possible steps should be taken to prevent the increase of the house sparrow and to reduce its numbers. The former object can be best obtained by the destruction of the nests at intervals of ten or twelve days during the nesting season; this is the most satisfactory method of control. The destruction of the birds themselves can be accomplished by netting or trapping in their roosting places after dark; by shooting the assembled flocks with No. 10 shot; and by poisoning with wheat coated with strichnia sulphate. All efforts to control sparrows must be systematically carried out and continued to prove of ultimate success. At the same time every effort should be made by protection and by the provision of nest boxes to encourage an increase in the numbers of useful native birds.

NOTES

The Dominion Entomologist is inspecting the work of the branch and the entomological laboratories in Western Canada.

Mr. J. M. Swaine, Assistant Entomologist for Forest Insects, is in Western Canada investigating bark beetle injuries to the forests in the Peace River district and northern British Columbia and studying forest insect conditions in these regions.

Mr. E. H. Strickland has been making a survey of the insects affecting field and garden crops in the Peace River region, where considerable agricultural development has been undertaken during the last few years. It is of great importance to determine the insects that occur and

to ascertain the conditions, from an entomological point of view, existing in such regions where agricultural development is taking place in order to be in a position to advise farmers concerning preventive and control measures. For a similar reason Mr. Germain Beaulieu is visiting Northern Ontario after travelling through parts of the province of Quebec during which journey, in addition to making entomological studies, addresses were given to the farmers in a number of localities on the control of the insect pests occurring in those places.

Entomological laboratories have been built during the summer at Treesbank, Man., and Lethbridge, Alta., and the erection of laboratories at Annapolis, N.S., and Fredericton, N.B., will be completed during the present month.

THE FRUIT BRANCH

A TOUR OF THE WESTERN PROVINCES

THE Fruit Commissioner, Mr. D. Johnson, during the month of July visited the various markets of the prairie provinces for the purpose of making himself more familiar with the conditions under which fruit is distributed there. The first market of importance visited was Winnipeg, where the Commissioner had an opportunity of investigating the arrival and sale of raspberries and strawberries. The wholesale houses of Winnipeg had arranged among themselves to pool their cars of fruit, the greater part of which was received from the northwestern states. The demand for berries was better than had been anticipated earlier in the season, as it was thought that, owing to the war conditions and the high price of sugar, the amount of

fruit consumed would be curtailed. The demand for tender fruit, however, not only in Winnipeg but in other markets in the west, was much larger than last year, and on the whole we have reason to believe that the wholesalers made prices fully 50 per cent higher than were obtained last season.

The same conditions existed in Saskatoon, Lethbridge, Edmonton and Calgary, although the province of Alberta was somewhat more seriously affected by the money stringency which exists in the west at present. They have a prospect, however, of an enormous grain crop, and if this crop is harvested without injury, the demand for fruit will be greatly increased.

A MARKETING CONFERENCE

In Calgary the commissioner attended a meeting which was called by the Calgary board of trade for the purpose of discussing the price of fruit. The convention was a most interesting one and lasted for three days, the delegates present representing the Manitoba, Saskatchewan and Alberta Grain Growers' Associations, the British Columbia Fruit Growers' Association, the Consumers' Leagues, the wholesale and retail merchants of Alberta, boards of trade, and railway and government officials. It was brought out at this meeting that last year the fruit grower in British Columbia received an average of 15c. (net) for his apples on the tree, while the consumer paid from \$1.50 to \$2.00 per box for the same fruit, the difference going to the transportation companies and the middlemen. It was the unanimous desire of the convention that the federal government should appoint a commission to thoroughly investigate the marketing of fruit and to devise some different methods than now existed of distributing same.

BRITISH COLUMBIA

In company with Chief Fruit Inspector Clarke, the commissioner visited the producing centres of British Columbia, and made an effort to meet the growers as much as possible on their own ranches, which gave him an opportunity of securing a deal of first-hand information as to the cost of production and marketing in British Columbia. The Kootenay district was first visited, many large and beautiful orchards being situated on the Kootenay lakes. Many of the growers here, however, were somewhat discouraged owing to the low prices secured last year and the unsatisfactory condition of the orchards at the present time. Scab and aphid have developed to an alarming extent and many orchards will have little or no No. 1 fruit for sale. Up to the

present this district has been fairly free from such pests.

The Arrow lakes were next visited, and, although fruit growing is not very much developed in this district, some excellent orchards showed the possibilities for growing fruit there.

The Okanagan lakes, however, constitute the great fruit producing district of British Columbia, and many thousands of acres of beautiful orchards are to be seen on the shores of these wonderful lakes. This district will probably have a tonnage equal to last year, but in some parts the quality will seriously interfere with the marketing, the scab and aphid affecting fully 50 per cent in the northern part, while the south or dry belt is comparatively free. The fruit of this valley is largely marketed by three marketing concerns, each of which was busy marketing the cherries and making preparations for the larger fruits.

The British Columbia fruit growers have made a special effort this year in the advertising of their fruits on the prairie markets as well as in their own province, and this campaign has resulted in practically no imported fruit being consumed. In the city of Vancouver alone it was estimated that \$80,000 worth of American small fruits would have been marketed had it not been for the vigorous advertising efforts carried on by the British Columbia fruit growers. They are making arrangements for an even more vigorous campaign for the marketing of larger fruits and are confident of good results.

On Vancouver Island fruit growing has not been developed to the same extent as on the mainland, but at Gordon Head a special effort has been put forth to promote this industry, with very good results.

WASHINGTON STATE

After leaving British Columbia, the commissioner spent a day or two in the Washington fruit districts, as the

fruit produced there comes in direct competition with the Canadian boxed apples. Mr. Johnson found that the apple crop in this district was about 60 per cent of last year, and in Oregon and Northern California the crop was very light. This district has, perhaps, been more advertised than any other apple-producing district in the United States, with the result that 650,000 acres of orchard have been planted. These orchards are now coming into bearing, and, while last year they produced some 15,000 cars of apples, they predict that in ten years' time, at the rate of increased production, they will produce 50,000 cars. Many of the orchardists are growing discouraged, as they were led to believe that a fortune was assured them in the business, but are now beginning to fear over-production. Some are seriously considering the removal of their orchards in order to plant other crops, such as alfalfa, or wheat, which grow so wonderfully well there.

THE "PANAMA PACIFIC"

The next point visited was San Francisco and the commissioner notes that although he had heard from tourists of the beauty and magnitude of the Canadian exhibit, he was quite unprepared for the sight which presented itself on entering the Canadian building. The displays were so arranged as to give the impression of looking over broad fields of grain, great hills of forest full of game, and beautiful orchards laden with fruit. It was freely stated by all visitors that the Canadian exhibit far surpassed anything else on the grounds. Ex-President Roosevelt, on visiting the Canadian building, wrote in the guest book: "By far the finest exhibit on the grounds"; and the German Ambassador also wrote: "Sorry to say the finest exhibit on the grounds."

THE ORANGE GROVES

After leaving San Francisco, Mr. Johnson visited the orange planta-

tions in Southern California and, while these orchards are well kept and present a beautiful appearance, yet the financial results last year were far from satisfactory. The average orange plantation is not a financial success and if many of the growers could be relieved of their property, they would be glad to take up other lines of agriculture in the east. The orange crop this year is light, being about one-half of last season. This should have a stimulating effect upon the apple market, as oranges are one of the greatest competitors that Canadian apples have to meet.

LARGE DISTRIBUTING CENTRES

On his return trip Mr. Johnson visited Kansas City and Chicago, two of the largest distributing markets on the American continent. The general condition of trade was not as good with them as a year ago and while they looked for fair prices for all fruits, yet the demand was not as good as on the Canadian markets. One reason for this, no doubt, is the unsatisfactory methods of packing employed by the greater part of the American fruit growers. While the western states are probably the best fruit packers in the world, the central states as well as many of the eastern ones, have a great deal to learn in this respect and as there is no federal legislation, such as our Canadian Fruit Marks Act (Inspection and Sale Act, Part IX), to control their methods of packing and grading, all kinds of grade marks, such as "Fancy," "Extra Fancy," "Special," etc., were apparent, which meant nothing to the purchaser as there was no guarantee that the fruit was packed in accordance with such marks. In many cases it was found that the face was no representation of the contents of the package. In fact, many packers seemed to think that it was their right to put the finest apples on top in order to effect sales.

THE SEED BRANCH

SEED INSPECTION SUMMARY

BY E. D. EDDY, B.S.A., CHIEF SEED INSPECTOR

IMPROVEMENT in the seed trade is clearly shown by the inspection work last spring. Not only was there a decided increase in the proportion of high grade seed on the market, but both the wholesale and retail dealers were more careful than ever before to conduct their business in conformity with the Seed Control Act. During the season 665 violations of the Act were detected by the inspection staff compared with 708 in the spring of 1914 and 839 in 1913. That this decrease is due to better conditions in the trade is indicated by the fact that it occurred when more inspectors were employed and the work done more thoroughly than ever before. The violations of the various provisions of the Seed Control Act last spring were as follows: A large proportion of these were of a minor character and due to lack of familiarity with the Act rather than a deliberate attempt to disregard its provisions.

Section 6, 124 violations. This section requires that grain, when offered for sale as seed, and other kinds of seed for which grades are not defined, must be labelled with the common names of the noxious weeds which may be contained. Most of the violations for failure to comply with this provision are with grain, although there are a few with white clover and some of the grasses. Previous to the enforcement of the Act, large quantities of feed grain from Western Canada, containing many noxious weed seeds, were sold for seeding purposes in Quebec and parts of Ontario and the Maritime Provinces. The enforcement of the

Act has caused dealers and farmers to be more careful in the selection of the grain they sell and use for seed. Considerable ordinary commercial grain is still used for seed, but in most cases the dealers are careful not to represent it as seed grain.

Section 7, 228 violations. This section requires that timothy, red clover, alsike and alfalfa seed must be marked with the grade. Some violations of this section occur in the seed producing districts, where retailers purchase direct from growers and expose the seed for sale without having it marked with the grade. Many of the violations are with wholesalers' seed which has been shipped with the grade indicated on a tag instead of stencilled on the bags. Often the tags are lost in shipment or misplaced by the retail dealers. Wholesalers are advised to have the grade number stencilled on each bag. Frequently seed received from United States wholesalers is exposed for sale by retailers without being graded. This is especially common with timothy, which is usually sold by wholesalers under a brand name and often without the Seed Control Act grade being indicated. Retailers are held responsible for having such seed tested and properly marked before offering for sale.

Section 8, 52 violations. A violation of section 8 involves having seed marked with a grade higher than the analysis warrants. This is usually caused by dealers using a certificate on a sample which does not accurately represent the bulk lot. When a large bulk of seed is not thoroughly mixed different bags are

liable to vary considerably. If a sample from such a lot grades No. 2 by a narrow margin, being close to the No. 3 line, some of the bags are likely to be only No. 3 and dealers assume unwarranted risk in grading the whole lot on such a certificate. Occasionally cases are found where the seed in a bag which was properly marked has been sold out and replaced by inferior seed of a lower grade.

Section 9, 152 violations. A violation of this section involves exposing timothy, alsike, red clover or alfalfa seed for sale which is below the minimum quality defined for No. 3. Occasionally such violations are detected with wholesalers' seed which is supposed to have been tested and properly graded, but part of the lot does not conform to the grade indicated on account of variation as outlined above. Most of the violations of this section are through locally grown seed being offered for sale by farmers or local dealers without being sufficiently cleaned and tested.

Section 10, 57 violations. This section requires that seed must germinate in the proportion of at least two-thirds of the standard for good seed of the kind or be labelled to show the actual percentage of germination. A few violations were detected through root and vegetable seeds of low vitality on the market,

but the most serious cases are in connection with corn and some with oats. It quite frequently happens that oats from Western Canada which have been frosted and the vitality injured are sold as seed in the eastern provinces. There is always considerable danger of low vitality with seed corn; last year several large lots were found which would have given very unsatisfactory results. Injury to vitality in corn is rather difficult to guard against as the seed may deteriorate after being shipped by the grower or wholesaler, through heating in the car or under inferior storage conditions given it by the retailer or farmer. On this account responsibility is sometimes difficult to place and the experiences this season again emphasize the importance of farmers making sure that their corn is of strong vitality before planting.

Section 11, 45 violations. This section requires that paper packet seeds be stamped with the year in which they were filled. Practically all the large dealers are complying with this regulation, but a number of cases are detected each year where the date has been omitted by small dealers who apparently were not familiar with the provision. In some cases there appears to be an attempt to market old seed which is low in vitality without indicating how long it has been in the packets.

All over the United States there are springing up rural schools which take farm life as their educational plant and get an education for every child out of that life. Beginning in seed-analysis, seed-testing, milk-testing and the like, they are gradually transforming the old, dead rural school into a new kind of school in which every educational process is related to the life of the community. These schools are becoming the laboratories, the counting rooms, the workshops, the economic and social centres of their communities.—*Herbert Quick in The Banker-Farmer.*

THE DAIRY AND COLD STORAGE BRANCH

A NEW PHASE OF FRUIT MARKETING PROBLEMS

BY EDWIN SMITH, IN CHARGE GRIMSBY PRE-COOLING AND FRUIT STORAGE WAREHOUSE

WHILE the problem of the proper distribution of Canadian fruits, and especially of the tender fruits, is one that rests largely with thorough organization of selling and marketing agencies, there is still much to be accomplished through the improvement of the means of transportation from the grower to the consumer. It is of first importance that fruit should be placed before the consumer in a good physical condition. Not only must the fruit be fit for consumption, but it must have an appearance that appeals to the eye.

In approaching this problem with the facilities afforded by the Grimsby Pre-cooling and Fruit Storage Warehouse, we are working along the following lines, namely: picking, packing, refrigeration (pre-cooling and refrigerator cars), loading in cars and the distribution of the fruit as much as possible. All of these points are very important, and it is obvious that bad results will follow if one of them is emphasized and others neglected.

It is our assumption that new methods or changes in methods have to be shown the shipper and grower in order that he will take them up and advance them in a commercial manner. It was to this end, together with the purpose of securing useful information along the lines of fruit storage under refrigeration, that the Department erected and is now operating a pre-cooling plant and fruit storage at Grimsby. In order to actually show growers and shippers the advantages offered in such an equipment, it is necessary at times for the Department to pur-

chase fruit from the growers in quantities large enough to make carload shipments under refrigeration.

THE MARKETING PROBLEM

Let us examine how this affects the marketing problem. Last season a purchase was made of 2,270 6-quart baskets of Montmorency cherries for western shipment at a time when no shipper or grower would assume the risk. The fruit was pre-cooled and shipped to Winnipeg. The demonstration was a complete success, the fruit, purchased for 37 cents per basket, selling for 60 cents because of its splendid condition upon arrival. At the same time cherries were moving sluggishly in Ontario markets at prices around 30 cents. As a result of this, shippers have been eager to make western shipments of pre-cooled cherries during 1915, and such shipments have actually increased 900 per cent.

By placing carloads of cherries in western markets this season the shippers about Grimsby have so cleaned up the sour cherries that, instead of worrying about where they were to dispose of all of their fruit, many of them have actually had to search to find enough fruit to fill local as well as western orders. Orders for carloads have had to be declined on this account.

In addition to showing how fruit should be handled in carload lots, some work in the pre-cooling and shipping of small lots by express is being carried on. In this connection also we believe that there is much to

be accomplished in the selection of the right package as the results in our strawberry shipments show. In one shipment to Winnipeg a lot of strawberries from Vineland packed in 24 full-pint crates, such as are used in British Columbia, brought 10 cents more per crate than the berries sold in the ordinary crate of 24 boxes containing four-fifths of a quart each. The point I wish to emphasize is that by *showing* the grower how a certain quantity of his fruit put up in a particular package actually sold for less money than a little over one-half the same amount sold in another package, there is not likely to be any hesitancy exhibited on his part in drawing right conclusions.

CAR LOADING

A feature of demonstration associated with our refrigeration investigations is the proper loading of cars. Every car of fruit which

leaves the Grimsby pre-cooling plant is loaded after the best approved methods. All cars are fitted with false or raised floors; the baskets are loaded in tiers from the side, thus avoiding climbing on baskets, and bulkheads with proper bracings are placed in the centre of the car, providing for free air-circulation and ensuring a rigid load. The result is that the baskets arrive at their western destination without any breakage. Recently, a carload of fruit was shipped to Grimsby, less than forty miles, for pre-cooling. As a result of careless loading a large number of baskets were broken and several dozen had to be repacked in new baskets in order to be handled.

The false floor is also a protection against leaky bunkers. In a recent shipment to Winnipeg at least 200 baskets would have been lost through wetting, had they not been raised from the floor by the slatting. This false floor costs the shipper about \$3.30 per car.

Before us all lies the general task of shaping our course in these hours of trial in such a way that the nation will emerge stronger, saner and cleaner from the day of testing. Each has his special task. No man need think that the gods will forgive the shirker. In days when the sons of Canada, drawn from the civil life of the country, are giving the last full sacrifice that their country's liberties may be saved, we who are left behind may well mould our own conduct on finer lines. While there is much virtue in the life, finely lived, of a private citizen, citizenship means more than this. Some participation it means in public life, for the blessings of national privileges cannot and must not be dissociated from national obligations.—*Hon Martin Burrell.*

PART II

Provincial Departments of Agriculture

WORK OF THE WOMEN'S INSTITUTES

PRINCE EDWARD ISLAND

NO definite programme for the expenditure of the Federal Grant under Women's Institutes for this province has been outlined. The regular field work is being carried on, and the second

annual Women's Institute Convention has just closed. It is the purpose of the Department to hold short courses in Household Science during the coming winter, similar to those held last year.

NOVA SCOTIA

BY MISS JENNIE A. FRASER, SUPERVISOR OF WOMEN'S INSTITUTES

THE question has been asked "What are the Institutes of Nova Scotia doing?" The necessity of the times leaves only one answer to that question. Red Cross work and still more Red Cross work. That seems to take all the spare time of the members and much time that is not "spare." When the Institutes are not really doing that work, you may rest assured they have only ceased for a few days to enable them to successfully conduct a picnic, garden-party, concert or some other money making scheme to raise money to buy supplies to commence all over again. There seems to be no limit to the demand, and there also, fortunately seems to be no limit to the supply either of the many forms of Red Cross work, or of the energies of our women. Brain is required to suggest ways and means to supply the needed where-withal, and that is not lacking in



MISS JENNIE A. FRASER,
Supervisor of Women's Institutes, Nova Scotia

our Institutes. Brains are as plentiful in the by-ways as in the highways, and we in Nova Scotia rather pride ourselves on supplying an ample amount of the public brains of the Dominion.

Naturally the Institutes are not neglecting any community work they have undertaken, and do not neglect community work that calls for assistance at the present time, neither do they neglect their monthly meetings. But generally speaking, the work of the moment—and everything else fades into insignificance—is Red Cross work. A special effort is being made this summer to raise enough money to present a field ambulance as a gift from the Women's Institutes of Nova Scotia. They hope to raise this fund by September 30th, and it looks very promising as already four Institutes have responded with the promise of sums amounting to \$260, and there are still two months to complete the fund, and some thirty Institutes left to assist.

This year the offer of a library from the Travelling Library Department of McGill University will be renewed, but will be made a month or two later as the months of January, February and March are the

leisure or reading months. It is hoped to make some arrangement to meet the forty dollar guarantee demanded by McGill, as that clause in the agreement rather frightened some of the Institutes. The new building on the campus of the Agricultural College in Truro, the second floor of which is to be devoted to Women's work in Nova Scotia, is rapidly nearing completion. And suitable furnishings will be the next consideration. The possession of such a fine opportunity for developing work will make a tremendous difference during the next few years in the Institutes of Nova Scotia. Especially do we hope to develop the former short courses into something more definite and more thorough, and we are sure of the support of the Women's Institutes in future arrangements toward that end.

A number of demonstrations in cooking has been given to the Institutes this summer, and several series of organization trips have been arranged. We can truthfully say that the future of woman's work in Nova Scotia through the Institutes looks very promising. As more opportunity comes through added facilities the development will be more rapid and more thorough.

NEW BRUNSWICK

BY MISS HAZEL E. WINTER, SUPERINTENDENT WOMEN'S INSTITUTES

IN 1912 New Brunswick had 25 institutes; in 1913 the number had increased to 40; and at the present time there are 76 active societies, with a membership of 2,200, all doing excellent work.

In the early days of the work, the Department of Agriculture was greatly handicapped by lack of funds, until in 1912, under the AGRICULTURAL INSTRUCTION ACT, New Brunswick received a grant of \$3,000 from the Dominion government to aid in carrying on the work

which was so greatly to benefit the women of the rural districts.

Part of the appropriation goes toward providing each institute with a small but comprehensive library—books dealing with matters of health, hygiene, sanitation, home nursing, house planning, food and diet, and cookery. That these books are widely appreciated by the women there is no doubt, and many societies have added others until they possess quite extensive libraries.

Other information on topics of

peculiar interest to housewives is supplied through bulletins published from time to time. The bulletins now in circulation are "Food and Diet," "Home Economics as Applied to the Choice and Preparation of Food," "The Preservation and Care of Food," "A Little Talk with the Baby's Mother," and "The Uses of Fruits in the Household." Others are in preparation and will in a short time be ready for use.

A yearly grant of \$5 is allowed each Institute by the department, for the purpose of carrying on their meetings and corresponding with the department. At the same time, all books and report forms are supplied the societies.

From time to time delegates are sent out from the department for the purpose of organising new societies and visiting those already formed. In the fall of 1914, sixty-four places were visited by delegates and 64 meetings held, with the result that many new places were sufficiently interested to take up the work and many of the older organizations went on with their work with increased enthusiasm.

SHORT COURSES

In the early months of 1915, short courses of two weeks' duration were held at three points in New Brunswick, viz.: Woodstock, Sussex and Chatham. The classes were largely made up of women and girls from the rural districts who had not the opportunities of such instruction in the schools of their communities. The courses were practical and the instruction given was such as would be helpful to the housewife in her everyday life. The course of instruction included the following classes:

1. Cookery, Theory and Practice.
2. The Composition of Foods and Food Values.
3. A Short Course in Waitress Work.
4. Personal Hygiene and Sanitation in the Home.

5. Home Nursing.

6. Sewing, Cutting and Fitting.

7. House Planning and Furnishing, including several lectures on Interior Decoration.

Household science teachers and a trained nurse had charge of the classes, the students being enthusiastic in the work. It is felt that these courses are filling a long-felt want in the life of the rural housewife. It is hoped that, with the aid of the Dominion subsidy, a larger number of these courses can be put on in the future, and lasting perhaps for a longer period.

In 1915 a "field demonstrator" was employed by the department. This was found to be necessary because of the number of requests coming in to the department from societies for demonstration-lectures on subjects related to home life. These demonstration-lectures include such subjects as: "First Aid in Emergencies," "Hospital Nursing at Home," "Table Setting and Serving," "Care of Typhoid Patient," "Diet for Various Diseases," "Children's Diseases," "Cake Making and Bread Making," "Food Value of Eggs, Milk and Cheese," "Economical Cuts of Meat and How to Cook Them," "The Efficient Kitchen," etc. Often a demonstration of modern labour-savers is given. In many instances very interesting lantern lectures are given, with especially prepared slides. This has proved an effective method of illustrating lectures on Interior Decoration, House Furnishing and House Planning.

A REST ROOM

Each year, since the introduction of the work into New Brunswick, a Rest Room has been maintained at the provincial exhibitions for the benefit of Institute members. Literature bearing upon the work was available and demonstrations upon various subjects given. At Fredericton, where the Institute department

owns a separate building, built with funds from the Dominion subsidy, a model kitchen, dining room, living room and bed room were furnished and equipped.

Clippings, magazine articles, bulletins and lectures from the various agricultural, vocational, teachers and home economics colleges are kept on file in the head office and are catalogued. Every society in the province has a list of these subjects and is at liberty to secure them at any time. There has been a widespread demand for these articles. All material is classed under the following headings:

- The Child in the Home.
- Patriotic Topics.
- Christmas.
- Dietetics.
- Fabrics, Laundry and Cleaning.
- Fruits and Jellies.
- Gardening.
- Home Nursing.
- Hygiene and Sanitation.
- Interior Decoration.
- Labour Savers.
- Public Schools.
- Recipes.
- Vegetables.
- Handicrafts in the Home.
- Miscellaneous.
- Women's Institutes.

New material is being added from month to month. At present our catalogue includes 600 articles of interest to the present day homemaker.

Magazines are kept on file for reference in the office, and during the short courses, magazines and books bearing upon the work undertaken by the different classes are always on hand for the use of students who wish to supplement their work with outside reading. Some of the magazines are:

- Canadian Home Journal.*
- American Cookery.*
- Good Housekeeping.*
- Woman's Magazine.*
- Journal of Home Economics.*
- Mother's Magazine.*
- Craftsman.*
- House Beautiful.*
- Industrial Art.*

This reading course affords an opportunity to many rural women for the wider knowledge which they have often desired but have not been able to obtain in any other way.

THE ANNUAL CONVENTION

In October—the 5th, 6th and 7th—the 3rd annual convention of the New Brunswick Women's Institutes takes place. In order that Institutes new in the work may be represented, the Department is paying all travelling and living expenses of one delegate from each society organized since the last convention. Several new features are being introduced at the convention, one of which is an exhibition of handicraft made by New Brunswick women. An attempt will be made to interest the women of the country in the new handicraft movement. It is hoped that after instruction has been given along the right lines, many women of the province will take up the various crafts, such as rug-weaving, basketry, metal-work, leather-work, wood-carving, etc., and it is now assured a market can be secured for such articles as can be made easily in the home.

Mrs. Laura Rose Stephen, of Huntingdon, Quebec, has been engaged by the department to give several addresses at the convention. Mrs. Stephen has travelled from the Atlantic to the Pacific giving instruction along lines of homemaking. Her ability as a public speaker and her wide knowledge of present-day affairs has placed her in the front rank of Institute workers. Those planning to attend the convention will be interested to learn that Mrs. Stephen will speak upon "Patriotism and Production in Relation to the Home," "The Influence of Environment," and "My Knowledge of Women's Institutes."

A very noticeable feature of the past year's work has been the interest and co-operation of all the Institutes in the province toward Red Cross

and patriotic activities. Since the beginning of the war, 2600 pairs of socks have been knit and sent away by Institute members; the sum of \$5,500 has been raised for Red Cross needs and relief work, and at present the Institutes have now on hand \$1,256.61 toward the purchase of a motor-ambulance for use in France.

The department has lately purchased woven tags bearing the crest of the New Brunswick Women's Institutes and the name "Canada"

beneath. These are sewn into all socks and hospital garments sent by Institutes to the front.

July 31st marks the close of the fourth year for the New Brunswick Women's Institutes, and especially does the past year show many changes and increased progress. The outlook for the fifth year is exceptionally bright and the women of our Institutes are entering the new year "as those whom greater thoughts and greater deeds await beyond."

QUEBEC

BY MISS KATHARINE FISHER, HEAD OF SCHOOL OF HOUSEHOLD SCIENCE,
MACDONALD COLLEGE

THE work of the Homemakers' Clubs in Quebec province is carried on under the direction of the School of Household Science, Macdonald College. Compared with similar organisations in the other provinces, the history of these clubs is unique, as the women of Quebec, unassisted by the Government, began this work themselves. Mrs. G. M. Beach of Dunham, Missisquoi county, may justly be regarded as the pioneer worker in Quebec as the first club in the province was organized under her leadership in January, 1911. From 1911 to 1913 other counties became interested and Miss S. J. Armstrong of Pontiac county, has done splendid pioneer work in that part of the province and has been the means of interesting the women of her county and of adjoining counties in the club work.

From the beginning, Macdonald College has taken an active interest in these organizations and, as the work grew, so many demands were made upon the College that in October, 1913, it was decided to appoint a graduate of the School of Household Science as Demonstrator to the Homemakers' Clubs of Quebec. Miss Frederica Campbell of Prince

Edward Island, a woman of wide experience in demonstration work and keenly alive to the problems confronting women on the farm, was appointed to this position. Until then the organizations had been known as the "Women's Institutes" and there was no common organization for the province. In February, 1914, however, a convention of representatives from the first formed Institute met at the College and drew up a constitution, changing the name to "Homemakers' Clubs." The main purpose of these clubs is the study of all matters relating to homemaking, co-operation in the work of the farm and the broadening of the social life of the community. The clubs are by no means limited to these subjects, however, as subjects relating to travel, music, literature, history, nature study and current topics may be found as part of their year's programme. They also frequently extend the work to the study of community, provincial and national problems, but their chief strength lies in the fact that women of all sects and classes may come together upon a common ground.

Some of the clubs have endeavoured to promote the interests

of the boys and girls of the community by giving prizes at school and county fairs for sewing, cooking, gardens, etc. Other clubs have been particularly interested in the work of the rural schools, in the improvement of the school and grounds and in medical inspection in these schools. Since the beginning of the war all the clubs have been doing patriotic work. In nearly every case the clubs raise their own funds for the materials which are to be made up and sent to Red Cross headquarters and large quantities of sewing and of knitted articles have been contributed.

In 1914 Macdonald College sent out four travelling libraries, but an account of these has already appeared in *THE GAZETTE*. The School of Household Science also maintains a Lending Library consisting of a complete set of Government bulletins from the United States and Canada on subjects of interest to the housekeeper, also magazine clippings, pamphlets and other literature which could be used in preparing pro-

grammes for club meetings. This library has proved invaluable in helping club members with their papers and addresses.

In June the second convention of Homemakers' Clubs met at Macdonald College and between fifty and sixty delegates from the thirty-three clubs now formed were present. The interest and enthusiasm displayed by these delegates is only one evidence of the splendid work which the clubs are doing in the province. Club members and speakers from different parts of the province addressed the convention on such subjects as "The Rural School," "Medical Inspection in the Schools," "Women and the Present War," "Uniform Textile Laws for Canada," etc. Discussions followed these addresses and various resolutions were adopted in reference to these questions. There is every reason to hope that the work will grow rapidly in the future and that it will be a large factor in promoting the interests of the women of the province, particularly those of the rural districts.

ONTARIO

BY GEO. A. PUTNAM, B.S.A., SUPERINTENDENT OF INSTITUTES

IN carrying on the regular work of the 850 Institutes of Ontario, between fourteen and fifteen thousand dollars of provincial funds are expended annually in sending speakers to address one and sometimes two meetings at each branch, and in paying grants and meeting incidental expenses. In addition to this "regular" work, we are enabled, with the \$6,000 secured through the federal grant, to offer the Institutes special assistance by way of demonstration-lectures in "Food Values and Cooking," "Home Nursing," and "Sewing." Demonstration-lecture work was fully outlined in a recent number of *THE AGRICULTURAL GAZETTE*, so it is needless to

repeat except to say that no line of work is of greater value or more appreciated by the women of rural Ontario, and we are planning to extend the work considerably during the coming fall and winter.

The good women in the province are so deeply interested in patriotic work that they hesitate to devote time to regular instruction work. Many Institutes which intended to take instruction last winter cancelled their applications for demonstration-lecture courses, as they wished to devote all their spare time to sewing, knitting and other patriotic effort. Classes will be formed at a number of centres the coming fall and winter.

ACTIVE WORK

In addition to demonstration-lecture work we are offering the Institutes in the northern sections of the province special conventions. The distance is too great for them to come to either London, Toronto, or Ottawa, so we have, during the past three or four years, planned for district conventions in Parry Sound, Temiskaming, Manitoulin, Algoma, Thunder Bay, Kenora, Rainy River.



GEO. A. PUTNAM, B.S.A.,
Superintendent of Institutes for Ontario

Our organization for carrying on work of all kinds in connection with the Women's Institutes is quite complete. We have branch institutes in nearly every riding of the province, and where more than two branches exist in the one electoral district we have a district organization composed of representatives from the branches. At the annual meeting of representatives from the various branches, district officers are chosen, and it is through these officers that the De-

partment arranges for the great majority of meetings, conventions, etc.

The work of the institutes is directed by the superintendent, who seeks the co-operation of lecturers, officers, and an advisory committee. The organization has extended until we now have a membership of about 25,000 with branch institutes at 850 points. The subjects considered in the work of the Institute cover a large field and deal with the home, the school, technical education, the child, the community, and more recently has been extended to include matters relating to the welfare of our country, her soldiers and foreign population. Not only are the topics considered of an educative nature but meetings are conducted in a business-like manner.

EXTENSIVE OPERATIONS

Women's institutes were first organized for the purpose of assisting the housewife with her housekeeping—the housing, feeding and clothing of the family—but the work has been extended to include a discussion of educational matters, social life, beautifying public places, establishment of public libraries—in short, to include all things that go to improve the condition of the members of the homes of a community.

In the summer of 1915 we sent lecturers to 825 places. Some of the subjects embraced in this series of meetings are given below:—

- "Consumption and its Prevention."
- "Household and Personal Hygiene."
- "First Aid to the Injured."
- "Contagious Diseases."
- "Home Nursing."
- "Household Economy as Applied to Diet and Health."
- "The Medical Inspection of Public Schools."
- "Physical and Mental Harm of Fault Finding."
- "Women as Nation Builders."
- "War and its Relation to Women."
- "The Foreign Woman in Canada."
- "Study and Reading Clubs."
- "The Advantages of Country Life."
- "Simple Entertaining in the Country."
- "The Problems of the Girl on the Farm."

"Recreation in Rural Communities."
 "The Institute and Community Education."
 "How and When Should a Girl Choose Her Future Vocation."
 "Helping our Boys Find Their Right Place in the World."
 "Building, Making-over, Decorating and Furnishing the Farm Home."
 "Dress and Good Taste."
 "Milk, Cheese and Eggs."
 "Butter Making: Care of Milk and Cream."
 "Salads and Soups—Why we should use more."
 "Business Points—What one Ought to Know about Deeds, Mortgages, Wills, etc."
 "Demonstration-Lecture Courses—An Important Development of Institute Work."
 "Life Principles."
 "Made in Canada."

IMPROVED SCHOOLS

There was a time in the life of rural Ontario when the country school was neglected by the parents of the children of school age. Such conditions have changed largely on account of the Women's Institutes of Ontario. To-day in many localities the women of the local Institute have co-operated with the teacher of the rural school in an endeavour to improve the conditions under which the country boy and girl gain their elementary education. In some sections of the province the Women's Institutes have organized parents' and teachers' associations and by means of this organization have brought the school and home into close touch. Many Institutes have undertaken to care for the rural school garden during the holiday months; to provide for dental inspection, sanitary drinking cups, and a supply of pure water, to give instruction to pupils in sewing and to assist with the rural school fair. Where local school boards have persistently refused to clean up the unsanitary and unsightly rural school many Women's Institutes have taken the matter in hand and by a vigorous use of much soap and water followed by necessary applications of paint and the planting of bulbs, flowers, shrubs, and trees, the country school has often been transformed into a beauty spot.

Besides providing more congenial surroundings for the child when at school, the Women's Institutes have been active along other lines with a view to safeguarding the health and morals of the child, as well as providing healthful amusements for the young people of the district. A few Institutes have arranged to provide the children attending school with hot dinners. "Clean Mouth Leagues" have been organized in a number of schools, while others have been provided with libraries, pianos and proper heating systems.

COMMUNITY WORK

Technical education in domestic science is a recent addition to the many activities of the Women's Institutes. Demonstration-lectures in "Food Values and Cooking," "Sewing" and "Home Nursing" are given at a nominal fee to groups of women and girls in a community where the Institute will agree to advertise the course, supply a suitable hall and the necessary supplies. The course includes ten lessons, and should the class be large enough and desire it, two or three additional lessons will be given on "Dairying," "Bee Keeping," "Poultry Raising" or "Gardening," or any two of these.

The Women's Institutes of Ontario have done more to foster a community pride and spirit than any other rural organizations in the province. The members of the Institute have been quick to see that rural life could be improved in very many ways and they have been just as quick to undertake to improve these conditions. The following is a partial list of work being done by Institutes:—Erecting drinking fountains, horse troughs, driving sheds, open air skating rinks, dressing rooms for boys and girls at bathing places, fences and roofs of churches, sidewalks, street lamps, seats and tennis courts for parks; visiting the sick of a neighbourhood; providing prizes for best kept lawns and flower gardens; organizing an-

nual community picnics and literary societies for the study of the best authors and for debating; waging war on the weeds growing on the country road-side, and cleaning up the too-often ill-kept country cemetery.

PRACTICAL PATRIOTISM

Since the present war began the operations of the Women's Institutes have been largely of a patriotic nature. Their contributions towards the hospital ship fund were generous, and much larger sums were given to the Red Cross and Belgian Relief. Their cash donations already total at least \$40,000, and the supplies of various kinds, furnished for our soldiers, will at a fair valuation amount to a sum nearly equal to their cash donations. Local relief at the same time has been given to many needy ones. The ever-watchful workers of these Institutes have

also given aid and sympathy to many of the destitute and lonely foreign population of their districts—in short they are ready and willing to do what they can, when and where they can, for the improvement of rural conditions in Ontario.

In all their activities the members recognize that their first duty is to the members of their own families. Food values, wholesome cooking, economical providing, household sanitation, care and feeding of children, household conveniences, and those things purely of the home have not been neglected.

The Women's Institutes of Ontario have accomplished much and have stimulated other organisations and municipal councils to undertake work of lasting value to the rural residents, but as yet the women of the province have only begun to realize the power they may exert through co-operation in bettering the physical, intellectual, and social life of the people.

MANITOBA

BY S. T. NEWTON, SUPERINTENDENT EXTENSION SERVICE, AGRICULTURAL COLLEGE

POSSIBLY the most progressive element in Manitoba life is the women's organizations. During the past year the attendance of women at short course lectures throughout the province was one-third larger than that of the men, consequently, in setting aside a larger appropriation for women's work, the government is acting in the best interests of permanent agriculture.

In order to have an effective local organization which will co-operate with the Extension Service section of the Agricultural college, Home Economics societies have been organized in many parts of the Province. These societies usually meet once a month, when subjects dealing with both rural and urban life are discussed by the women in a capable

and efficient manner. When desired, literature dealing with the subject chosen is sent to the secretary of the society.

To encourage the societies to provide for libraries and other progressive methods of instruction best suited to local conditions, a grant of 50 cents for the first twenty members and twenty-five cents for each additional member is given by the government. This grant, along with the fees contributed by the members, enables the officers of the society to carry out a progressive programme throughout the year.

Since the outbreak of the war, a considerable part of the grant has been used to buy material which the members made into garments and forwarded to the Red Cross organization.

The programme for the coming winter has not been definitely decided on. The opinion of the members of the societies is being obtained,



S. T. NEWTON,
Superintendent of Extension Service, Manitoba
Agricultural College

Dressmaking or Millinery with an expert dressmaker in attendance, not so much to teach as to superintend the sewing, for each woman will be working on her own problem with such assistance as she may require from time to time. Very naturally considerable teaching will be done incidentally.

Arrangements are being made for classes in the forenoon for the senior pupils of the school in most cases.

In many parts of the province halls are not available where there seems to be the strongest desire for this work, and it is hoped to use passenger coaches, which will be equipped with sewing-machines, tables, fitting-platforms, etc. The car would be run on to a siding for the week and used as a travelling schoolroom.

Demonstrations in Cookery, Home Nursing, Canning and Preserving will be given in connection with all the societies of the province and at as many other meetings as possible.

However, the best work is being done by the women themselves in their own societies. By the aid of a strong organization they are reaching out and assisting all phases of rural life, the school, the church, boys' and girls' clubs, rural co-operation, etc.

and from the reports already received it would seem that the following lines of work will be carried out:

A one or two weeks' course in

SASKATCHEWAN

AT the beginning of the present year, a Director of Household Science for Saskatchewan was appointed as an official of the Department of Education, and entered upon her duties the first of February.

Her first work was to visit the Normal Schools at Regina and Saskatoon, and also the Third Class Normal Sessions held at various places in the province. All the

centres at which Household Science is taught were also visited. As the teaching of the subject is, at the present time, confined to the four cities Regina, Moose Jaw, Saskatoon and Prince Albert, special stress is laid upon introducing the work in rural communities.

The two questions asked by Boards of Trustees are: What will be the cost of equipment for this work? And, What time will be

required for it on the regular school program? As the work has been

carried on successfully in a rural school, a brief account of it will answer these questions.



MISS FANNIE A. TWISS,
Director Household Science, Saskatchewan

SPECIMEN WORK

To the enthusiasm of the School Inspector and of the teacher is due the credit of starting the work in Cobourg School District, four miles south of Moose Jaw. The teacher called a meeting of the School Board and placed the proposal before them. Then a mothers' meeting was called and it was discussed with them, with the result that the necessary equipment was procured and the work was soon under way. The majority of the children came a considerable distance which necessitated the bringing of lunches. This noon lunch was the basis of the work in Household Science.

Twenty-eight pupils were attending regularly and equipment and supplies quoted are such as would be necessary for a school of from twenty-five to thirty pupils. The



EQUIPMENT FOR HOUSEHOLD SCIENCE, COBOURG SCIENCE DEPARTMENT,
SASKATCHEWAN

equipment, which included coal-oil stove, oven, utensils, table-cloth, etc., amounted to twenty-seven dollars and thirty-five cents, at retail prices. The staple supplies as flour, sugar, cereals, etc., were supplied by the School Board at an expenditure of five dollars, which was sufficient for eight weeks. The mothers of the children supplied, at the discretion of the teacher, perishable supplies, as milk and butter, six quarts of the former and one-half pound of the latter being used weekly.

soups, corn starch puddings, baking powder biscuits, muffins and occasionally candy.

THE DUTIES ASSUMED

Eighteen pupils were sufficient to undertake the work in connection with the lunch. They were arranged in three groups, one group being composed of boys only, and these took turn in doing the work each day. The duties of the workers varied daily and the time spent by them occupied from twenty to



NOON LUNCH AT COBOURG HOUSEHOLD SCIENCE DEPARTMENT, SASKATCHEWAN

The children individually brought such supplies as vegetables, eggs, etc., when required. Three cents per day was the average cost of the coal-oil used for fuel.

The school has a good basement in which the equipment was placed and two trestle tables found there were made use of in serving. Here, one hot dish was prepared daily and used to supplement the lunches brought by the children. These dishes include cocoa, cream of wheat with dates, cream of vegetables

thirty minutes, which was usually partly at recess, and partly at noon. The serving was accomplished on the cafeteria plan and the children sat around the trestle tables. These were spread with linen table-cloths, which, together with the dish towels and individual hand towels, had been hemmed by the pupils during the sewing lesson on Friday afternoons.

The laundering of the table-cloths amounted to twenty cents weekly, but this could be eliminated if the children had them done at home.

Each child brought his own cup and saucer, spoon, knife and fork. Paper table napkins were furnished at a cost of about five cents per week. An average cost of running expenses might be quoted at three cents to the mothers, and three and four-fifths cents to the Board, per capita per week.

It is apparent that the success of

this work depends largely upon the teacher and, in order that teachers may receive training for carrying it on in rural schools, a summer session was established this year at the Provincial Normal School, Regina, and the course given proved most successful. It is the intention of the Department to grant certificates to those teachers who complete satisfactorily two summer sessions.

UNIVERSITY OF SASKATCHEWAN

BY MISS ABBIE DELURY, DIRECTOR

THE Homemakers' Clubs of Saskatchewan correspond to the Women's Institutes of Ontario and the other provinces, the object of their existence being (like that of these sister organizations) to make life brighter and better, and more interesting for the home woman and to give her opportunity for companionship with others.

The organization of the Homemakers' Club is, perhaps, a little different from that of similar institutions in the other provinces in that they are affiliated with the Provincial University as a part of its extension department. They have not yet organized into districts. Need of such organization has not yet been felt and the clubs are so widely scattered and distances so great that it would not be generally practicable.

It is hardly five years since the first club was organized, and at present the number is nearly one hundred and fifty. The membership varies according to the district. Some clubs have to begin with ten or twelve members. Many have a membership of nearly one hundred. The school district is the unit for organization, but sometimes a club is made up of representatives from three or four districts. Ten miles is not considered too great a distance to drive to attend a meeting. So large a part has the work begun to play in the woman's life that if

it happens that a club member removes to a district where there is no club she finds something lacking until she has managed to organize one.

At the present time the clubs are scattered east and west from one border of the province to the other, and from the southern boundary to forty miles north of Battleford.

WORK OF THE CLUBS

The work undertaken by each club depends largely on the needs of the women themselves, and on the needs of the community. All are interested in home problems and are anxious to get the young people interested. School interests seem to come next in importance and much has been done towards encouraging school gardening, improving and beautifying of school grounds and buildings, and school sanitation. The work of the school children is given a large part in the Homemakers' local fair. The fair has become a large feature in the summer work of the clubs. Prizes are offered for school garden products, penmanship, maps, composition and drawing. This year Red Cross work and activities of a like nature have necessarily been to the fore and much has been accomplished and is still being accomplished. The following is a typical Homemakers' club programme:

JANUARY 8

TOPIC: Woman's Part in Canada's Progress.

FEBRUARY 13

TOPIC: Why I should be a Homemaker.
History of St. Valentine.
Humorous Reading.
Valentine Supper.

MARCH 13

TOPIC: Influence of Home and Surroundings.
Ways to Lighten Labour.
Reading.

APRIL 10

TOPIC: System in Housework.
Suggestions and Recipes for Curing and Preserving Meat in Summer.

MAY 8

TOPIC: Principles of Cooking and Food Values.
Cake Demonstration.

JUNE 12

TOPIC: The Making, Keeping and Marketing of Butter.
Report of Convention Delegates.
Demonstration: Tea, Coffee and Cocoa.

JULY 10

TOPIC: Sunday Dinners for Summer.
Demonstration on Ice Cream.

AUGUST 14

TOPIC: Relation of Parents to the School.
Salad Demonstrations.
Reading.

SEPTEMBER 11

TOPIC: The Family Pocket Book and Household Management.
Preparation for Threshing.

OCTOBER 9

TOPIC: Child Nature, and Care of the Children.
Story of Hallowe'en.

NOVEMBER 13

TOPIC: Courtesy and Good Manners in the Home.
Annual Election of Officers.

DECEMBER 11

Christmas Program by Club Members and Their Families.

HOMEMAKERS' CONVENTION

The Homemakers' Convention is, perhaps, the greatest event in the

life of the clubs. It is held annually at the University, usually in May. The delegates are accommodated at the University residence, which until this year has been able to shelter them all. The Convention has become so large that this is no longer possible. An official delegate is sent from each club, which means that railway expenses are paid by the Department of Agriculture. Usually a club sends a second one at its own expense, and many others choose to come of themselves. The following is the programme of the Convention held last May:

FIRST SESSION

Address of Welcome: President Murray,
Dean Rutherford.

Director's Report.
Modern Education: Dr. Wilson,
Regina Normal School.

SECOND SESSION

Our Book Shelves: Miss Mary Mantle.
The Rural School: Mr. Snell, Saskatoon
Normal School.
Poultry Keeping: Professor Baker.

EVENING SESSION

The Work of the Department of Field Husbandry: Professor Bracken.

THIRD SESSION

Business Session, Discussion, Reading of Reports.

FOURTH SESSION

Living Twenty-four Hours a Day:
Mrs. A. V. Thomas, Winnipeg.
The Work of Women Grain Growers' Association: Mrs. McNaughton,
President, Saskatchewan W.G.G.A.
Visit to University Grounds and Buildings.

EVENING SESSION

Lantern Slide Lecture on Gardening:
Mr. Norman Ross, Indian Head.

FIFTH SESSION

Common Physical Defects of School Children: Dr. Annabel McEwen,
Medicine Hat.
The War and Some of Its Outcomes:
Mrs. Arthur Murphy, Edmonton.

SIXTH SESSION

Women's Work in Manitoba:
Mrs. Dayton, Virden, President,
Manitoba Home Economics' Clubs.
Value of Co-operation:
Mr. W. W. Thomson, Regina.

The help given to these clubs from the University is of various kinds. Speakers and demonstrators are sent to visit the clubs, or to speak at open meetings, picnics, etc., given by the clubs. Short courses of from two to four days' duration are given at different points during some of the winter months, and are very largely attended. Literature in the form

of bulletins is produced for them from time to time. As far as has been possible, both reference and circulating libraries have been sent about.

The work seems to be growing in interest and enthusiasm and appears to be supplying a need that was, and is, very much felt in the life of the country.

ALBERTA

BY MISS A. CARLYLE, INSTRUCTOR IN DOMESTIC SCIENCE

THE rapid progress made in connection with the improvement of woman's lot in the province of Alberta has been due to three main facts, namely: The Dominion and the Provincial Governments' financial assistance; the enthusiastic and conscientious efforts of those in charge of this branch of the Department of Agriculture; and the ever-increasing interest and appreciation on the part of the women of the province themselves.

This year, at the close of the session in the three Provincial Schools of Agriculture, the three young ladies in charge of the Household Science work at the schools were asked to convene with the Provincial Superintendent of Women's Institutes, Miss McIsaac, and a schedule for the summer's work was arranged. According to this schedule, the Province was divided into three parts and plans were made for each branch institute to receive a lecture or demonstration, and also for the organization of new branches in those parts not to be visited by the demonstration train. To successfully accomplish this latter aim,

advertising was done at least two weeks in advance of the time of meeting, and the results were all that could be desired.

The Federal appropriation of fifteen hundred dollars to Alberta for Women's work, under THE AGRICULTURAL INSTRUCTION ACT, is being expended in meeting a portion of the salary and travelling expenses of the Superintendent, Miss McIsaac, the travelling expenses of the three other teachers from the schools, and the advertising and incidental expenses of the meetings.

We are indeed grateful for the fact that this extra assistance was made possible this year, because we are convinced that the Women's Institute as an organization is a powerful instrument in promoting the best interests of the women of the Province; and in many districts there was lacking only some person who would take the initiative. Practically every real woman realizes that she has a duty to perform in the way of studying and putting forth her best efforts on behalf of the welfare of the home and community life.

EXPERIMENTS WITH COMMERCIAL FERTILIZERS

NOVA SCOTIA

BY JOHN M. TRUEMAN, B.S.A., PROFESSOR OF AGRICULTURE

INVESTIGATIONS extending over a number of years have demonstrated that the soil on the Agricultural College farm needs only some form of phosphoric acid in addition to barn-yard manure. Very little or no advantage has resulted from the use of potash. This year, therefore, our experiments with fertilizers are confined to the use of various forms of phosphoric acid.

In addition to this we are studying the value of ground limestone when applied in fairly liberal amounts to the soil. A great many inquiries reach us from farmers asking for definite information as to the use and money value of the ground limestone.

DETAILS OF EXPERIMENTS

The following outline shows what fertilizers have been used and on what crops:

Mangels, All plots 1 acre. Fertilizer used.
Plots No. 1, 2 & 3. 1000 lb. Basic Slag (Sydney).

All the mangel plots were treated with the same fertilizer. Each plot was seeded with a different variety of mangels and one half of each plot was treated with 2 tons of marl. This experiment is intended to test the three different varieties of mangels, and the effect of lime upon the soil.

Turnips. All plots 1 acre.
Plot No. Fertilizer used:
4 1000 lb. Acid Phosphate.
5 1000 lb. Raw Rock Phosphate.

- | | |
|------------|-----------------------------------------------------------------------------------------------------------------|
| 6 | 1000 lb. Basic Slag (Sydney). |
| 7 | 1000 lb. Acid Phosphate. |
| 8 | 1000 lb. Basic Slag (Sydney). |
| 9 | 800 lb. Filter Residue (From Sugar Refinery, Halifax). |
| 10 | 1000 lb. Acid Phosphate.
One half of plot treated with 2 tons ground limestone, other half with 2 tons marl. |
| 11 | 1000 lb. Basic Slag (Sydney). |
| 12, 13, 14 | Soft turnips and rape treated with 1000 lb., Basic Slag. |
| 15 | 1000 lb. Acid Phosphate, one-half of plot treated with 2 tons ground limestone. |
| 16 | Rape with 1000 lb. Slag. |

These plots are seeded with the same variety of Swede turnips. Plots Nos. 10, 12 and 15 are seeded with other varieties of Swede turnips.

TREATED WITH MARL

In field No. 5, oats were sowed on 8 acres, three alternate half acres were treated with 2½ tons of marl each. This land was seeded with timothy and clover when sown to oats and the effect of the marl on the succeeding hay crops will be noted. This marl is from Antigonish Co., N.S., and contains 85 per cent of lime.

In addition to the work of the farm department, the horticultural department is also testing the value of various fertilizers with and without lime, and the extension department of the college, in co-operation with farmers in the various parts of the province, is studying the same problems.

NEW BRUNSWICK

BY J. B. DUROST, B.S.A., SCHOOL OF AGRICULTURE, WOODSTOCK

THERE are no fertilizer experiments being carried on this season directly under the supervision of the Department of Agriculture. However, a brief account of those carried on last season by the writer, together with a short discussion of results should be of interest to readers of THE GAZETTE.

A review of the customs report indicates that New Brunswick uses between one-third and one-fourth of all the artificial fertilizers imported into the Dominion. This does not necessarily mean, as we have heard some say, that our soils are poor. We have always been at a loss to understand why the farmer is being advised on all sides to use a certain proportion of concentrated foods in his rations for stock, but on the other hand is being told that the use of concentrated plant food for his crops is likely to result in a loss to himself. While we do not approve of any farmer "going it blind" in using artificial fertilizers, yet we are not among those who condemn the use of all concentrated plant food as so much waste of money.

The conditions which govern the profitable use of commercial fertilizers vary so much that no farmer is justified in listening to the "selling talk" of the fertilizer agent, or doing as his neighbour does, in using them. To make the best use of them the farmer must understand the composition of fertilizers and the probable effect of their actions upon his growing crop.

In order to bring this knowledge to the farmers the writer planned a series of experiments covering the principal potato growing sections of the province.

Fertilizer materials consisting of Nitrate of Soda, Sulphate of Am-

monia, Acid Phosphate and Muriate of Potash, sufficient to make the equivalent of a half ton of "High Grade" factory mixed goods, were sent to ten or twelve different points in this section of the province.

Meetings were called and these materials were displayed, their properties and action on the growth of plants explained. They were then weighed out in the proper amounts to make a mixture that contained the same proportion of ammonia, phosphoric acid and potash; and used in a comparative test with factory mixed goods.

The table on the next page gives the comparative cost, and the yields where one-half ton of factory mixed goods was used on an equal area against the home-made mixture containing the same amount and proportion of plant food.

It would be very difficult to estimate the far reaching results of the work done last year. Notwithstanding the difficulties presented by the war in Europe, which practically shut off the supply of potash, upwards of one thousand tons of fertilizer ingredients were bought for members of agricultural societies by the "New Brunswick Agricultural Societies United", for which purpose, this co-operative buying organization was organized in the spring of 1914. These one thousand tons were distributed to all parts of the province, and the experiments of last year are being repeated by the farmers themselves on a vastly larger scale. Many are using both the home-mixed and the factory-mixed and will make their own comparisons. Many are also using various combinations, the results from which will teach them the best "formulae" for their respective soil.

RESULTS OF EXPERIMENTS WITH FACTORY-MIXED VS. HOME-MIXED FERTILIZERS ON POTATOES

- (1) Home-mixed.
(2) Factory-mixed.

LOCATION		Brand	Cost per Ton	Difference in Cost Price	Yields	Increase Over Factory-mixed
Canterbury.	(1)	4-6-10	\$26.50	\$13.50	58 bbls.	8 bbls.
	(2)	4-6-10	40.00		50 "	
Benton.	(1)	4-6-10	26.30	15.70	64 "	17 "
	(2)	4-6-10	42.00		47 "	
Woodstock.	(1)	4-6-10	27.00	15.50	49 "	2 "
	(2)	4. 5-7-10	42.50		47 "	
Hartland.	(1)	4-6-10	26.50	13.50	78 "	17 "
	(2)	4-6-10	40.00		60 "	
Florenceville. ...	(1)	5-8-9	29.50	13.50	83 "	2 "
	(2)	5-8-9	43.00		81 "	
Bristol.	(1)	4-6-10	26.50	13.50	55 "	5 "
	(2)	4-6-10	40.00		50 "	5 "
Bath.	(1)	4. 5-8-9	28.00	13.50	96 "	18 "
	(2)	4. 5-8-9	41.50		78 "	
Upper Kent.	(1)	5-5-10	30.00	13.00	75 "	†
	(2)	5-7-10	43.00			
Kilburn.	(1)	4. 5-7-10	28.00	13.00	54 "	††
	(2)	4. 5-7-10	41.00		54 "	
Glassville.	(1)	4-6-10	28.00	12.00	53 "	
	(2)	4-6-10	40.00		47 "	6 bbls.
Millville.	(1)	4-6-10	27.10	13.80	63 "	††
	(2)	4-6-10	41.00		63 "	
Cardigan.	(1)	2. 5-6-6	18.60	13.40	40 "	
	(2)	2. 5-6-6	34.00		32 "	8 bbls.

†Crops on this plot looked better, but farmer did not keep figures of "factory-mixed" plots.

††More marketable potatoes on "home-mixed" plot.

MACDONALD COLLEGE

THE CHEMISTRY DEPARTMENT

BY H. S. HAMMOND, B.S.A., LECTURER IN CHEMISTRY

Orchard experiments to determine the most economical way of developing a thrifty orchard:

In this young orchard, fifteen plots are laid out. (including two check plots) to which various mixtures of fertilizers have been applied for the last seven years. In other respects such as cultivation, spraying and cover-cropping, the orchard receives the treatment approved by modern orchardists.

Experiments on the relative crop-producing powers of:

- (1) Barnyard manure.
- (2) Barnyard manure and fertilizers.
- (3) Fertilizers only.

The four year rotation practised on the college farm is used as the basis of this experiment, viz.:

First Year, Grain, sown with clover and grass seed.

Second Year, Hay.

Third Year, Pasture.

Fourth Year, Hoed crops, viz., corn, mangels and Swedes.

The land devoted to these experiments is divided into four fields, one for each year of the rotation. Each field is divided into three sections, A, B, C, and each section is again divided into three plots, each 1-10 acre in area.

Section A receives 20 loads manure once during the rotation, for the hoed crops.

Section B receives 10 loads of manure once during the rotation, together with such fertilizers as are considered advisable and practicable in good farming.

Section C receives fertilizers only in such quantities as are used in practice. The hoed crops receive the majority of the fertilizers, and a light application is applied to the hay fields.

These experiments are now in their

fourth year, i.e., this year will complete one rotation.

Very interesting results are being obtained, but no conclusions can be derived from the yields until one or two more rotations have been completed.

THE CEREAL HUSBANDRY DEPARTMENT

BY JAMES MURRAY, PROFESSOR OF CEREAL HUSBANDRY, MACDONALD COLLEGE

THE objects of the work with fertilizers at present under way at Macdonald College are:—

To ascertain if commercial fertilizers can be profitably used on this farm as a supplement to barnyard manure.

To compare the crop producing powers of commercial fertilizers and of barnyard manure when applied in a rotation in which grass and clover are included.

To furnish a concrete illustration to students and visitors of the application of the science of chemistry in its relation to soils, crops and fertilizers.

Devoted to this work is a block of about four acres divided into four fields—one for each year of a four year rotation. The rotation practised is the same as that followed on the main college farm, the crops grown being as follows:—

Field 1. $\frac{2}{3}$ oats; $\frac{1}{3}$ barley seeded with clover and grass seed.

Field 2. Hay.

Field 3. Pasture.

Field 4. $\frac{1}{2}$ corn; $\frac{1}{3}$ mangels; $\frac{1}{3}$ turnips.

Each of the four fields is divided into three equal sections, A, B and C, and each section is given separate treatment. Each section in turn is divided into three plots, each 1-10 of an acre in size.

On section A commercial fertilizer alone is used, on section B barnyard manure is supplemented with commercial fertilizer and on section C the fertilizer used is barnyard manure.

The fertilizers used are those that experience has proven to be best adapted to the particular crop to which it is applied.

These experiments were started in 1911 so that the crop of 1915 is the first one on the second round of the rotation. We can scarcely expect any definite results until at least the second course of the rotation is complete, but after that time we should be able to glean some data that will be of value to the ever increasing number of farmers who use commercial fertilizers in this province.

ONTARIO

CONDENSED FROM EXPERIMENTAL RECORDS

THE Ontario Department of Agriculture is carrying on a series of fertilizer experiments under the general supervision of Professor R. Harcourt of the Chemistry Department of the Ontario Agricultural College. The Professor is also conducting soil demonstration work. Experiments are further being carried on at Vineland Experimental

Station. In addition some of the District Representatives have conducted fertilizer experiments, but they are practically a duplication of the main experiments, being mainly designed to bring them to the attention of people locally, and to apply them to local conditions.

Five plot experiments, each plot one-fifth of an acre, are being con-

ducted with peach orchards at Vine-land. Sodium nitrate is applied at the rate of 150 lb. per acre. Potassium chloride, superphosphate and bone meal are applied at the rate of 200 lb. per acre. One plot, for purposes of comparison, is not treated.

SOIL DEMONSTRATION WORK

This work is conducted by the Department of Chemistry at the Ontario Agricultural College. Thirty-two plots in mangels of 3-200 of an acre each are being utilized. The area to be weighed is 1-100 of an acre. Seven plots are subject to no fertilizer. The others are treated, in variation of substances, with sulphate of ammonia, applied at the rate of 200 lb. to the acre, with superphosphate at the rate of 400 lb. to the acre, muriate of potash, 200 lb. to the acre, nitrate of soda, 125 or 250 lb. to the acre, blood meal at 300 lb. to the acre, calcium cyanamide, 125 or 250 lb. to the acre, basic slag, 400 lb. to the acre, rock phosphate, 1,200 lb. to the acre, Drury's feldspar, 1,400 lb. or 2,000 lb. to the acre, common salt, 400 lb. to the acre. These ingredients are varied according to the plots that are being experimented with. Two of the plots are also being subject to Radio-active fertilizer at the rate of 500 lb. per acre. For plot 26, Kelp is to be applied later at the rate of 1,000 lb. to the acre. In half a dozen cases nitrate of soda, calcium nitrate, sulphate of ammonia and superphosphate are used as top dressing, once in three dressings, twice in two and three times in one.

IN POTATOES

Nineteen plots of 3-100 of an acre are being experimented on in potatoes. The area to be weighed is 1-50 of an acre. No application of fertilizer is applied to Plot 1, no fertilizer is applied to Plot 2, but this plot is to be treated with gypsum

later. All the other plots are limed at the rate of two tons per acre with limestone dust. Four plots are subject to no fertilizer in addition. On three of the others sulphate of ammonia is applied at the rate of 400 lb. to the acre, superphosphate at the rate of 900 lb. to the acre, sulphate of potash at the rate of 200 lb. to the acre, the applications being varied. Plot 9 has nitrate of soda at the rate of 500 lb. to the acre, applied as a top dressing in two dressings. Plot 10 has blood meal applied at the rate of 700 lb. to the acre. Plot 11 has calcium cyanamide at the rate of 500 lb. to the acre, superphosphate and sulphate of soda being also applied in each case. In Plots 13, 14 and 15 sulphate of ammonia at the rate of 400 lb. to the acre and sulphate of potash at 200 lb. to the acre are mixed with 1,000 lb. to the acre of basic slag, in the first instance, 700 lb. of bone meal to the acre, in the second instance, and 2,000 lb. to the acre of rock phosphate in the third instance. In Plots 17, 18 and 19 muriate of potash and Drury's feldspar are added to sulphate of ammonia and superphosphate. Radio-active fertilizer is also added to Plot 18. Two other ranges each of the same area as the foregoing range of fertilizer plots are under cover crops, tests to be followed by fertilizer treatment based on results from these experiments.

IN POTS

Pot experiments are also being conducted under the same auspices each experiment being done in duplicate in series as follows:

Series A:—To study the properties and fertilizer value of new potash products made from feldspar by C. W. Drury, Queen's University, Kingston, Ontario.

Soil used:—Sand from Walsh, Norfolk County, Ontario.

Crop—Potatoes; 14 pots.

Size of Pot.—10" x 8" deep, holding 25 lb. sand.

Series B:—To study the properties and fertilizer value of new potash product. Kelp made from seaweed by Dominion Agricultural Chemistry Department, Ottawa.

Soil used.—Sand from Walsh, Norfolk County, Ontario.

Crop.—Potatoes; 10 pots.

Size of Pot.—10" x 8" x 8" deep, holding 25 lb. sand.

NOTE:—Pots 1 and 8 in series A act as complete fertilizer check pots for this season.

Series C:—To study the properties and fertilizer value of the new Radio-active fertilizer. The sample of Radio-active fertilizer used is crushed Carnotite rock.

Soil used.—Garden loam.

Crop.—Lettuce (Grand Rapids); 8 pots.

Size of Pot.—10 1/4" x 7 1/4" x 5" deep holding 10 lb. loam.

Series D:—Similar to Series C.

Soil used.—Garden loam.

Crop.—Beets; 8 pots.

Size of Pot.—12" x 10" x 7 3/4" deep holding 10 lb. loam.

Series E:—Similar to Series D. & C.

Soil used.—Garden loam.

Crop.—Cabbage; 8 pots.

Size of Pot.—12" x 10" x 7 3/4" deep holding 30 lb. loam.

Series F:—Similar to Series A to test the new feldspar product made from feldspar by C. W. Drury.

Soil used.—Sand from New Lowell, Simcoe County.

Crop.—Cabbage; 14 pots.

Size of Pot.—12" x 10" x 7 3/4" deep holding 30 lb. sand.

Series G:—Similar to Series B to test the new potash product Kelp made from seaweed by Dominion Agricultural Chemistry Department, Ottawa.

Crop.—Cabbage; 10 pots.

Size of Pot.—12" x 10" x 7 1/4" deep holding 30 lb. sand.

WITH LIMESTONE SCREENINGS

Experiments were made with limestone screenings as a source of lime to soils:

Two carloads from Queenston Quarries:—This was the whole of the materials that pass through a 3/8-inch sieve used by the Stone Crushing Companies when preparing material for road purposes. These were distributed as follows:

One carload (40 tons):—*Horticultural*

Experimental Station, Vineland Station. Applied at the rate of 3 to 4 tons to the acre.

One carload (32 tons).—Welland:—This was used by 4 farmers mostly on Fall Wheat and pasture. Applied at the rate of 4 tons to the acre.

Seven carloads from Vinemount Quarries:—These were sent out experimentally. This material differs from that in the other cars in that nearly all of the larger stone has been sifted out leaving a limestone dust that approximately 90 per cent of which would pass a ten mesh sieve and 20 per cent would pass a hundred mesh sieve. These were distributed as follows:

Three carloads to Welland County on heavy soils at the rate of three tons per acre, principally on sugar beets, corn and garden crops.

One carload to Ste. Anne, on corn crops.

One carload to Bronte, among three farmers on corn crops.

One carload to Burlington, (Have not yet received full report).

One carload to Winona. Applied at the rate of three tons to the acre.

"STONEMEAL" FERTILIZER

Experiments are being made with "stonemeal" fertilizer on plot one-half acre in extent with heavy loam soil, Experiment 1 being conducted on the O.A.C. gardens. Each plot crosses rows of nearly all the common vegetables grown.

Experiment 2 is being conducted on the O.A.C. farm in field behind Poultry plant with a crop of potatoes.

Experiment 3 is being conducted on the O.A.C. farm in field behind Poultry plant with a crop of turnips.

Experiment 4 is being conducted on the O.A.C. farm in Puslinch field with a crop of corn. In each case in Plot No. 1 no fertilizer is being used, and in Plot No. 2, 1,000 lb. of "stonemeal" per acre.

IN THE GLASS HOUSE

Experiments are being conducted in the Glass-house also by the Chemical Department, Ontario Agricultural College, Guelph.

Experiment A is to test the immediate effect of new potash fertilizer made from feldspar by Mr. C. W.

Drury, of Queen's University. The crop is radishes, and the soil garden loam. Each plot consists of three rows, 3 feet by $1\frac{1}{2}$ feet wide. Plot No. 1 is subject to no fertilizer. Plot No. 2 to nitrate of soda—23 grams, sulphate of ammonia—90 grams, superphosphate—226 grams, and Drury's feldspar—1,050 grams. Plot No. 3 is the same without Drury's feldspar. Plot No. 4 is all Drury's feldspar.

Experiment B is to test the effect of Radio-active fertilizer, the crop

being radishes, and the soil garden loam. Each plot consists of three rows, length 3 feet by 3 feet wide. Plot 1, no fertilizer is used, Plot 2, 73 grams is applied.

Experiment C is to test the effect of Radio-active fertilizer, the crop being tomatoes and the soil garden loam. This experiment was conducted in 7 inch pots, the treatments being given to eight pots. Pots 1 to 8, no fertilizer, pots 9 to 16, Radio-active fertilizer, 50 grams with the soil in the eight pots.

VINELAND STATION

BY F. M. CLEMENT, B.S.A., DIRECTOR

THE strawberry fertilizer experiment was undertaken to determine, if possible, the value of commercial fertilizer applied to strawberries:—

(1) Where an abundance of moisture is available at all times.

(2) Under natural conditions.

Plots of approximately one-tenth of an acre in duplicate are being used in each case. The fertilizer is applied to the soil shortly after the plants are set at the rate of 500 lb. bone meal, 250 lb. muriate of potash and 200 lb. nitrate of soda per acre.

We have no experiments to determine the value of a commercial fertilizer applied in the spring before the crop is picked. The necessary water for the one lot of plots is applied by means of Skinner irrigation, and all plots are mulched and cultivated after the plan of recognized methods. The work has been under way but one year, and, consequently, the results are available only as a report of progress and not as definite results.

NITRATE OF SODA ON CELERY

To one-half of each plot of celery is made every two weeks an application of nitrate of soda at the rate of 200 lb. per acre. The other half of the plot is used as a check. The plots are in duplicate and to one an abundance of water is supplied by means of the

Skinner irrigation; the other is watered only naturally. The object is to determine (1) the value of water applied by means of the Skinner system as a forcer for celery; (2) the value of nitrate of soda as a forcer with and without an abundance of water. This is the first year of the experiment and the plants have not yet been harvested.

LIME DUST VS. BURNED LIME

Dust screenings from stone crushers throughout the province have accumulated until there are now many tons of unused materials that are possibly wasted. These are largely limestone, and it is hoped to demonstrate their value on various types of soils. To do this and to compare with the burned (air slacked lime) plots have been laid out on clay loam, red clay, sand loam and sand. These soils are planted to apples, pears and peaches and if any benefit is to be derived it should be noticeable this fall. The burned lime was applied at the rate of 1500 lb. and the rock lime dust at the rate of 800 lb. per acre. This latter is proportionally high but the extra quantity was added because of the large percentage of coarse materials in it. No difference is yet noticeable in the texture of the soil as far as cultivation is concerned and it is yet too early to report on the effect of cover crops and the fruit.

MANITOBA

BY F. G. CHURCHILL, PROFESSOR OF SOILS, AGRICULTURAL COLLEGE

NO commercial fertilizers were used on the Manitoba agricultural college farm until the present year, when the following experiments were started by the Department of Soils. The plots were seeded to oats May 3rd, and the different fertilizers applied May 12th.

No results are available at the present time (July 9th) but the oats on the plots that received the sodium nitrate are somewhat farther along than the other plots.

Each plot 2 rods by 8 rods (1-10 acre), 1 rod between plots.

SERIES 100

Plot 101	Receives a complete mixture as follows:—	
		Per Acre.
	Sodium Nitrate.....	150 lb.
	Superphosphate	400 "
	Muriate of Potash....	150 "
Plot 102	Receives a mixture as follows:—	
	Superphosphate	400 "
	Muriate of Potash....	150 "
Plot 103	Check no treatment.	
Plot 104	Receives the following:—	
	Superphosphate	400 "
	Sodium Nitrate.....	150 "

Plot 105	Receives the following:	
	Sodium Nitrate.....	150 "
	Muriate of Potash....	150 "
Plot 106	Sodium Nitrate.....	150 "
Plot 107	Superphosphate.....	400 "
Plot 108	Check.	
Plot 109	Muriate of Potash.	150 "
Plot 110	Mixture as follows:—	
	Sodium Nitrate.....	100 "
	Superphosphate	200 "
	Muriate of Potash....	100 "
	Manure.....	8,000 "
Plot 111	Mixture as follows:—	
	Sodium Nitrate.....	100 "
	Superphosphate.....	200 "
	Manure.....	8,000 "
Plot 112	Manure.....	8,000 "
Plot 113	Check.	
Plot 114	Manure.....	8,000 "
	Lime.....	1,500 "
Plot 115	Lime.....	3,000 "
Plot 116	Gypsum.....	2,000 "
Plot 117	Gypsum.....	1,000 "
Plot 118	Check.	
Plot 119	Crushed Limestone ..	6,000 "
Plot 120	Crushed Limestone ..	3,000 "
	Manure.....	8,000 "

Some experiments are also being conducted by the field husbandry department in connection with the work in crop rotation.

SASKATCHEWAN

THE VALUE OF FERTILIZERS IN CROP PRODUCTION—OUTLINE OF WORK UNDER WAY ON THE INVESTIGATION FIELD, UNIVERSITY OF SASKATCHEWAN, SASKATOON

BY PROFESSOR JOHN BRACKEN, DEPARTMENT OF FIELD HUSBANDRY, COLLEGE OF AGRICULTURE

REFERENCE to the accompanying plan will show the location of the fertility project on the investigation field at Saskatoon. It comprises 12 blocks lettered C & D at top of plan and numbered 6, 7, 8, 9, 10 and 11 at left side of plan. Each block is subdivided into 104 plots. The project is planned to determine the value of each of twenty-one fertilizers or combina-

tions of fertilizers. Samples of the soils were taken from two places in each plot before the fertilizers were applied. The value of each of the fertilizers that were applied will be measured by its effect in the first year on the yield of each of six different crops, and in each of the second, third, fourth, fifth and sixth years on the yield of at least one crop.

At the expiration of each five year

period, soil samples will be taken to determine the loss or gain of plant food elements. Every fifth plot, as is indicated in the outline, is a "check plot." As six series are being used, the effect on the first, second,

third, fourth and fifth crops will be measured every year instead of one year in six as would be the case if only one series were used.

The fertilizer treatments that are being used are as follows:

BLOCK C

- | | |
|------|---------------------------------------------------------------------|
| (1) | Fresh manure, legumes, organic matter and rock phosphates. |
| 2 | Manure—heavy, rotted. |
| 3 | “ heavy, fresh. |
| 4 | “ light, rotted. |
| 5 | “ fresh. |
| (6) | Fresh manure, legumes, organic matter and rock phosphates. |
| 7 | “ “ “ “ “ “ “ “ |
| 8 | “ “ “ “ “ “ “ “ |
| 9 | “ “ “ “ “ “ “ sodium nitrate and acid phosphate. |
| 10 | “ “ “ “ “ “ “ sodium nitrate and potassium chloride |
| (11) | “ “ “ “ “ “ “ rock phosphates. |
| 12 | “ “ “ “ “ “ “ acid phosphate and potassium chloride |
| 13 | “ “ “ “ “ “ “ sodium nitrate acid phosphate and potassium chloride. |

BLOCK D

- | | |
|------|----------------------------------------------------------------------|
| 1 | Irrigation. |
| 2 | None. |
| (3) | Fresh manure, legumes, organic matter and rock phosphates. |
| 4 | Lime. |
| 5 | Sodium nitrate. |
| 6 | “ “ “ “ “ “ “ |
| 7 | “ “ “ “ “ “ “ |
| (8) | Fresh manure, “ “ “ “ “ “ “ |
| 9 | “ “ “ “ “ “ “ better tillage. |
| 10 | “ “ “ “ “ “ “ sodium nitrate and phosphate and potassium chloride. |
| 11 | “ “ “ “ “ “ “ sodium nitrate, acid phosphate and potassium chloride. |
| 12 | Sodium nitrate, acid phosphate and potassium chloride., |
| (13) | Fresh manure, legumes, organic matter and rock phosphates. |
- (Plots 1, 6, 11, 3, 8, 13 are "Check Plots").

The rotations used with each of the above-named treatments are as follows:

ROTATION

- 1st Year:—Fallow and apply fertilizers—south quarter seeded to grass; next quarter seeded to legumes.
- 2nd Year:—
 South Quarter—Grass.
 Next “ Legumes.
 Next “ Cereals.
 North “ Hoed crops, roots 3 rows, potatoes 3 rows, corn 6 rows.
- 3rd Year:—
 South Quarter—Grass.
 Next “ Legumes.
 Next “ Oats.
 North “ Oats.
- 4th Year:—
 Breaking and fallow.
- 5th Year:—
 Wheat.
- 6th Year:—
 Oats.

Rates of application of commercial fertilizers are as follows:

FERTILIZER APPLICATIONS

South Quarter:—

200 lb. sodium nitrate per acre or 4 lb.....	per $\frac{1}{4}$ plot (1/50 acre)
300 lb. acid phosphate per acre or 6 lb.....	“ “
150 lb. potassium chloride per acre or 3 lb.....	“ “

Next Quarter:—

150 lb. sodium nitrate per acre or 3 lb.....	“ “
350 lb. acid phosphate per acre or 7 lb.....	“ “
150 lb. potassium chloride per acre or 3 lb.....	“ “

Next Quarter:—

150 lb. sodium nitrate per acre or 3 lb.....	“ “
250 lb. acid phosphate per acre or 7 lb.....	“ “
150 lb. potassium chloride per acre or 3 lb.....	“ “

North Quarter:—

200 lb. sodium nitrate per acre or 4 lb.....	“ “
450 lb. acid phosphate per acre or 9 lb.....	“ “
200 lb. potassium chloride per acre or 4 lb.....	“ “

Some explanations respecting manures and crops named above may be given:

“Fresh Manure:”—production—less digestion and waste. (At first 10 tons per acre evenly distributed on all quarters. After first round of rotation to be corrected from the actual crop yields). Apply in spring before fallow.

“Organic Matter:”—winter rye sown with cereals before fallow at $\frac{1}{2}$ bushel per acre, to be ploughed under the following spring. (Subject to modification.)

“Manure”, Heavy Rotted:—ten tons per acre—in spring before fallow.

“Manure”, Heavy Fresh:—twenty tons per acre—in spring before fallow.

“Manure”, Light Rotted:—Five tons per acre.

“Grass:”—Brome 3 pounds and Western Rye 10 pounds.

“Legumes” in Rotation:—Alfalfa, in fertilizer treatment—2 pounds red alsike or sweet clover with cereals.

“Cereal” in Rotation:—Wheat first six years, possibly others later.

“Hoed Crops”:—Roots (Swedes), south 3 rows, potatoes, next 3 rows and corn north 6 rows.

It will be seen that the project will not only determine the value of the fertilizers or combinations of each used on each of six crops the first

year and their continued effect in each of the succeeding five years, but embraces four entirely separate crop rotations.

BRITISH COLUMBIA

FERTILIZER experiments with the following crops are being conducted:—

(1) *Onions*: The experiments are being made in triplicate. Three different growers at Kelowna have five plots each. The time of application, amount of fertilizer and mode of application are the same in each experiment.

(2) *Celery*: Five plots of one-tenth acre each are being tried on two farms at Armstrong. In addition, lime is being applied on new land planted to celery.

(3) *Potatoes*: Three experiments of five plots each (one at Salmon Arm, which is the same as tried in 1914, and two new ones at Armstrong) are being conducted.

(4) *Tomatoes*: One experiment of five plots is being conducted at Salmon Arm. This is also a duplication of the work done in 1914.

(5) *Raspberries*: A duplication of the experiment conducted in 1914 is being tried on the same block.

(6) *Strawberries*: A duplication of the same experiment tried in 1914 is being conducted, but on a new block.

(7) *Apples*: Same number of plots, etc., as for onions.

In the above experiments where five plots are used the fertilizer is applied as follows:—

Plot 1. Check Plot (not fertilized).

Plot 2. A complete fertilizer is applied.

Plot 3. Nitrogen and Potash are applied.

Plot 4. Nitrogen and Phosphoric Acid are applied.

Plot 5. Potash and Phosphoric Acid are applied.

CO-OPERATIVE WOOL MARKETING

MANITOBA

THE sheep industry has never received the attention it deserves in Manitoba, primarily on account of the high cost of fencing, an essential to the successful handling of sheep under present conditions. This difficulty, to a large extent, is now being overcome, and the breeding of sheep promises to become a staple industry.

Sheep should not only be a profitable branch of mixed farming, but their introduction into Manitoba's farming system will do much to help control the spread of noxious weeds, and an increased supply of lamb and mutton will go a long way in helping to reduce the cost of living, both on the farms and in the cities.

In order to encourage the sheep industry, and assist the farmers of the province in finding a satisfactory market for their wool, the provincial Department of Agriculture undertook to handle this season's wool clip for the farmers on a co-operative basis.

Upwards of 74,000 pounds, four car loads in all, were received, and finally sold to the highest bidder, a local firm securing the lot at \$26.80 per hundred, except for the tags. Much of the wool was lacking in yolk, weak in fibre, and dark, as compared with the bright wool of Ontario and

Quebec. This is easily accounted for by the fact, that in Manitoba sheep are largely used as weed destroyers, and allowed to run on the summer fallows, where a great deal of soil is blown into the fleeces.

On the whole, the results are regarded as most satisfactory, the price realized for the farmers, after paying the one cent per pound commission, charged for handling, being from five to seven cents more than would have been realized had the Department not taken up the work.

The grades, values, and quantities of each are given in the following table:—

GRADE	Value, cents	Amount, lb.
Fine combing.....	25	738
Fine medium combing .	26	3,942
Medium combing.....	27 ¼	16,222
Low medium combing .	27 ¼	32,843
Coarse combing.....	27	3,000
Lustre combing.....	27	5,745
Fine medium clothing..	25	694
Medium clothing.....	25	4,359
Low medium clothing..	25	2,403
Fine clothing.....	23	750
Rejections.....	23	1,391
Black.....	23	1,195
Cots.....	23	23
Washed.....	35	827
Tags.....	8	74,132
		504
		74,636

SASKATCHEWAN

THE season's work in connection with the handling of wool for Saskatchewan sheep owners has just been brought to a successful conclusion. In all 306 sheep owners

marketed their wool through the Co-operative Organizations' Branch. The following is a synopsis of the kinds of wool and prices received:

	Price	
	lb.	per lb.
White wool.....	145,570	25
Black wool.....	628	20
Tags (manure clotted locks)	1,336	7
Tags (manure clotted locks)	275	12 1/2
Pulled wool.....	141	15
Washed wool.....	245	30
Mohair.....	24	20
Pelts.....	120	12 1/2
	148,339 from	
	22,000 fleeces.	

Scale Testing.....	2.00
Supplies, Telegrams, Rent of	
Trucks and Miscellaneous.....	108.72
	\$596 00

All the wool was handled through the warehouse at Regina, except some 29,000 pounds, which was loaded direct into cars at Tompkins. On all the wool passing through the warehouse a charge of half a cent per pound was made to cover handling, which amounted to \$596, made up as follows:

Warehouse rent.....	\$ 62.50
Insurance.....	65.55
Exchange.....	91.38
Warehouseman and Help.....	152.50
Printing letters, instructions, forms, labels, etc.....	113.35

The shipments varied all the way from Mr. J. Glenn's 10,020 pounds down to Mrs. Wm. Graver's 12 pounds, thus showing the truly co-operative nature of the enterprise. Most of the shipments, however, were from owners of from 25 to 200 head of sheep. The wool was well and carefully prepared on the whole. The buyers, Messrs. Berman Bros., of Minneapolis, expressed themselves as well pleased, and anxious for the opportunity to bid again next year. It may be stated that the average price received, after paying for sacks and twine supplied by the Branch, also defraying freight from local points to Regina, drayage and other expenses, came to 23.66 cents per pound.

ALBERTA

BY E. L. RICHARDSON, SECRETARY LIVE STOCK ASSOCIATION

I am sending you herewith photograph of the wool which was recently sold by the Alberta Sheep Breeders' Association after

having been collected from its members and graded by the wool expert of the Dominion Live Stock Branch. The wool in the photograph was sold



GRADING WOOL IN ALBERTA

Twenty-six thousand dollars' worth (5 car-loads) in the Horse Show building at Calgary, sold by the Alberta Sheep Breeders' Association

for a little over \$26,000 to the Edmonton Hide and Fur Co. to be sent to Boston. The average price obtained was 27.77 cents per pound. The weights and prices of the various grades were as follows:

15,664	Fine Medium Comb.	.....	\$ .30
48,116	Medium Comb.	.....	.31
6,368	Low Medium Comb.	.....	.30
925	Coarse Comb.	.....	.28
4,237	Fine Medium Cloth.	.....	.22
3,347	Medium Cloth.	.....	.25 1/3
871	Rejections.	.....	.12
486	Gray and Black.	.....	.17
2,602	Locks and Pieces.	.....	.10
2,300	Tags.	.....	.05
177	Mohair.	.....	.20

85,093 lb.

Live Stock Branch of the Dominion Department of Agriculture in supplying expert graders so that the grades will be accepted by the purchasers without question. As far as I know this is the most successful sale of wool ever made in Alberta. It is, of course, most satisfactory to the breeders, as the Association does not charge any commission for selling the wool, merely charging the actual expense of the men handling the wool while it is being graded and the local freight charges to Calgary. The horse show building in which it is being graded is provided by the city of Calgary without charge. While the buyers



GRADING AND PACKING WOOL, CALGARY, ALBERTA

This is a very practical demonstration of the value of a co-operative sale and the manner in which the Sheep Breeders' Association can be of assistance to its members through the co-operation of the provincial government in assisting to finance the association from year to year, and the assistance rendered by the

pay more for the wool handled in this way than they would if purchased direct from the farmers, they are saved the expense of travelling from point to point collecting small shipments. They know exactly what they are buying of each grade and have five carloads properly collected in one place for shipment.

DEMONSTRATION CONTESTS

PRINCE EDWARD ISLAND

BY THEODORE ROSS, SECRETARY FOR AGRICULTURE

THERE has not as yet been held any demonstration contests at the fall fairs in this province and I do not think there is

likely to be any this year, at least no appropriation has been made for this work.

NOVA SCOTIA

BY M. CUMMING, B.A., B.S.A., SECRETARY FOR AGRICULTURE

WE have not any regular organized system of demonstration contests at our fairs in Nova Scotia. At certain fairs, however, there are regularly held competitions in the judging of the various classes of live stock. These are for the most part confined to boys under twenty-five years of age, and their standing in the contest is determined partly by the placing of their stock and in part by their writing of reasons. This type of contest is now carried on in so many exhibitions in Canada that I presume it is unnecessary to enter into further details.

At a number of our fairs prizes were given for the best exhibits of seed grain, of sheaves of grain, of potatoes, turnips, etc., grown on fields which have been entered in our field crop

competition, which is now becoming a very important factor of our agricultural campaign. Some of these competitions are open to boys under twenty years of age and others to farmers of all ages. The rules of these competitions are, for the most part, the regular rules given with fairs and exhibitions, every competitor being required to exhibit a certain quantity of the produce of their field or fields which he has had entered in the various field crop competitions.

Some years ago we made a special feature of butter making competitions, etc., but later on came to the conclusion that better results could be achieved from the same amount of attention devoted to instruction at our short courses.

QUEBEC

BY J. A. GRENIER, SECRETARY FOR AGRICULTURE

THE Quebec Department of Agriculture will not organize this year demonstration contests at our fall fairs. However, we will continue to hold contests for the making of pasteurized butter, unpasteurized butter, cheese and for the pasteurization of skimmed milk.

These contests are open to all the members of the Cheesemakers' Co-operative Society.

We will also make demonstrations showing how to pack fruits in boxes and in barrels, at the different fairs, and particularly at the Quebec fair.

Demonstrations will also be given with trees bearing all their fruits in order to teach how to do chemical spraying. All the material required for the different works in an orchard will be exhibited. We will teach also

those who will be interested how to use some of these tools. Demonstrations will be given on the different methods of grafting the trees, pruning, spraying, drainage, irrigation, etc.

ALBERTA

BY H. A. CRAIG, B.S.A., DEPUTY MINISTER OF AGRICULTURE

ALL demonstration contests are held in connection with summer and fall fairs. Besides encouraging the holding of these competitions, the department sends judges to place the awards, pays two-thirds of the money offered as prizes and an official of the department has helped in the arranging of the prize lists. A large number of these lists include judging competitions and the handling and grooming of animals by boys and girls under a certain age.

A special feature which the department has been interested in is the exhibition of young animals,

either colts or calves, which have been fed and cared for by the exhibitor, said exhibitor not to be more than sixteen years of age. We have further requested that the prizes consist of some pure-bred stock instead of silverware or money, said live-stock to be the property of the boy or girl who wins the largest number of points after having shown the same animal two or three consecutive years at the same fair.

It is pleasant to be able to say that a number of societies have taken up this work and it has proven a very effective means of interesting the young people in local fairs.

It might be inferred that bankers are teaching farming and attempting to tell farmers how to run their business. The real fact is that bankers are teaching themselves in their effort to include farmers to absorb more knowledge and use more efficient methods. Bankers are not only receiving education and knowledge which is necessary to the conduct of their business, but also inspiration to live for a better purpose, and they are learning that the unselfish things that they do are what makes life really worth living. Incidentally they are showing the public that the banker's opinion on questions of public interest is valuable and worthy of the greatest consideration.—*J. R. Wheeler in The Banker-Farmer.*

Agriculture is not alone our financial stay, but a stalwart farming population is our best political and governmental bulwark—an anchor to windward.

The throbbing heart of national prosperity and national life lies in the growing crops, in the keeping of our farmers.

Whatever the problems, local or international, that we must solve in the near and unknown future, we will be the better prepared for them if we build up our agriculture and rural life, making the farm more likeable, as well as more profitable.—*B. F. Harris at American Bankers' Conference.*

PRINCE EDWARD ISLAND

NOTES

FIFTY-ONE egg circles in Prince Edward Island report for the second quarter of the year, 475 shipments of 372,868 dozen eggs of the gross value of \$68,310.72, and of the net value to the circles of \$64,244.58. No reports were received from 15 membership circles. The members shipping numbered 3,103.

Miss Helena C. McDonald, on the event of her father becoming Lieut.-Governor of Prince Edward Island, resigned her position with the Department of Agriculture for that province.

The Second Annual Convention of the Women's Institutes for Prince Edward Island was held in Charlottetown on July 20th and 21st. Upwards of seventy delegates were present.

Professor S. B. McCready, who recently resigned from the Directorship of Elementary Agricultural Education for Ontario, has received an appointment on the staff of the Prince of Wales College at Charlottetown as Professor of Nature Study. Professor McCready will continue and extend the work that has been carried on in that institution.

NOVA SCOTIA

COUNTY AGRICULTURAL REPRESENTATIVE VALUE

BY M. CUMMING, B.S.A., SECRETARY FOR AGRICULTURE

LESS than a year ago, the Department of Agriculture of the province of Nova Scotia appointed as their representative, to look after the agricultural interests of Antigonish County, Dr. Hugh McPherson. Since his appointment Dr. McPherson has actively devoted his attention to many lines of work calculated to advance the agricultural interests of his native county. Perhaps no more tangible line of work, capable of interpretation in terms of dollars and cents, has been carried on by Dr. McPherson than the co-operative marketing of wool, which with the aid of H. L. Hewson, of Amherst, he organized. Mr. Hewson, who has always been interested in promoting the sheep

industry of the Maritime Provinces, has recently been giving attention under the Federal Department of Agriculture to the proper marketing of wool by the farmers. Dr. McPherson at once sought his assistance. Commonly wool is washed, and without being graded is sold to the retail store. In the process of washing and rolling all grades of the wool become more or less intermixed, and proper sorting is rendered very difficult. The best buyers prefer to get their fleeces unwashed and properly rolled, so that they can sort the wool themselves. It was in this way that the Antigonish wool which Dr. McPherson assisted in marketing was prepared.

GOOD PRICES REALIZED

Altogether a little over 12,000 lb. of wool was marketed under the co-operative association which Dr. McPherson organized. The average price realized for the *unwashed* wool was a shade better than 36 cents in comparison with from 36 to 38 cents for washed wool which was being paid by the ordinary trade. And when it is considered that the wool shrinks from 25 to 50 per cent in weight in the process of washing, it will be observed that the farmers who marketed their wool under the expert direction of Dr. McPherson and Mr. Hewson thus realized about 10 cents per pound more for their wool than if they had sold it in the ordinary way, or in the aggregate rather more than \$1,200.

Another line of activity with which Dr. McPherson has identified himself has been in assisting farmers to buy their commercial fertilizer supplies co-operatively. Several carloads of those fertilizers recommended by Dr. McPherson were bought by farmers in Antigonish and Cape Breton counties last spring. One single agricultural society in Cape Breton, by purchasing in this way saved \$600, and other bodies of farmers saved correspondingly. Now a short-sighted view might make it appear that the money thus saved by co-operative buying and selling, being lost to the retail trade, did not represent such a large saving as appears on the face, but the facts are that when farmers can buy fertilizer more reasonably, and sell their goods more profitably, they purchase larger supplies, grow bigger crops, derive bigger returns from their farms and so add to the prosperity of the whole community in which they live. Ultimately every line of trade benefits from the prosperity of the farmer, and therefore every one who is interested in the welfare of the country is bound to indorse these lines of activity by which the farmers through organization are able to make bigger returns from their farms.

FERTILIZING EXPERIMENTS

Besides these lines of work Dr. McPherson organized and carried on a short course in agriculture in the town of Antigonish last winter at which there was an average attendance at each session of something over 200 farmers. Also, he is carrying on experiments with various fertilizers on typical soils of the county, which will form the basis for a still more intelligent system of fertilizing the land. Under his guiding hand too, a seed centre constituted of farmers, who are interested in growing seed of the highest quality on their own farms, has been organized, and is already resulting in an improvement of the character of farm crops on many farms. That is the subject of comment of every agriculturist who has had the opportunity to visit Antigonish of recent years.

Dr. McPherson is not alone in the work which he is carrying on, but has the backing of the county council and the board of trade of Antigonish, both of which bodies gave handsome donations towards the erection of a demonstration building suitable for carrying on classes in agriculture and also containing the offices in which Dr. McPherson makes his headquarters.

A forward movement has certainly begun in earnest in Antigonish county. In addition to the various lines of work already described, two new creameries have been constructed in the outlying parts of the county within the past two years and there is an agitation for still further development along these lines. Antigonish county, which for years has made little if any progress, is now developing in earnest, is bound to take a foremost place among the counties of Nova Scotia. When some historian writes up the history of this wonderful growth, he will find that not the least of the agencies which have led to the development has been the work of the county agricultural representative, Dr. Hugh McPherson.

QUEBEC

ALFALFA PLOTS

BY M. LIGUORI, SECRETARY QUEBEC FARMERS' EXPERIMENTAL UNION

IN a number of districts of Quebec province, alfalfa, like clover, suffered from winter killing. Members of the Experimental Union report that a little more than half of the total area seeded in alfalfa last year has been destroyed. However, wherever alfalfa had been sown in deep, healthy, well-tilled and well prepared soil, over three-quarters of the plants survived and these plants, owing to such favourable conditions, were thrifty and in good condition last fall.

The Grimm alfalfa, imported from Minnesota, and of which thirty-four plots were sown in various districts, has proved to be resistant. A variety imported from Belgium before the war also gave good results, leaving out accidents caused by exceptional frost during the last season.

All, or almost all, of our experimental fields, with the exception of the check plots, were inoculated with soil coming from alfalfa fields and almost all the reports of our members state that the plant has made a better growth in inoculated soil. It is believed also that inoculation, by means of soil coming from alfalfa fields or sweet clover fields, gives better results than inoculation by means of artificial bacteriological cultures. The latter method may give good results when it is employed by specialists but with ordinary farmers the success is very doubtful. It has been abandoned by our association.

Mention has been made of sweet clover (*Melilotus alba*) also called Bokhara clover by the trade. It is not intended to advertise this clover. It has been far too much advertised recently by salesmen and agents. If I mention this plant, which may be useful under certain conditions and on certain soils, it is specially to call attention to the fact that whenever patches of sweet clover occur on the farm, it is not necessary to secure, at great expense, soil to inoculate the fields that are to be sown in alfalfa. Too many farmers are ignorant of this fact.

To sum up, it may be concluded that on well selected and well prepared soils and with good seed, alfalfa may grow in almost all parts of the province. On the farms of the Oka Agricultural Institute, where twenty to forty arpents of alfalfa are annually harvested, it has been a success for the last twenty years and it gives regularly three crops of hay. In other districts it yields only two crops.

For the last few years, alfalfa has been tried under all the climatic conditions in the province by means of small experimental plots, varying from one-eighth to one-fourth of an arpent, seldom one arpent, but there are indications that in the future the executive of the association will limit the number of plots and increase their size.

MACDONALD COLLEGE

EXPERIMENTS ON THE CONTROL OF THE BUD MOTH

BY E. MELVILLE DUORTE, B.S.A., M.Sc., ASSISTANT IN BIOLOGY

I. SPRING SPRAYING

THROUGH the kindness of Mr. W. Chisholm, manager of the estate of Mr. Edward Maxwell at Baie D'Urfe, I was permitted to conduct experimental spraying on a portion of the orchards on this estate which had for some time been badly affected with bud moth. The orchard under consideration was divided into a number of small plots, each consisting of about eight trees.

The sprays applied were as follows:

1. April 27th:—At the time that the buds were just starting to burst, the outer leaves showing green. At this time the larvæ were just beginning to enter the buds.

2. May 4th:—The buds quite expanded. The majority of the larvæ had entered the buds. Only a few remained in their hibernating nests.
3. May 12th:—Three days before the blossoms opened.
4. June 3rd:—Shortly after the fall of the blossoms. The length of time elapsing between the 3rd and 4th sprays was due to the fact that a cold spell just after the third spray delayed the flowering of the later varieties so that it was impracticable to apply the fourth spray before June 3rd.

The spray used was lime sulphur (concentrated home made) diluted to .0008 with lead arsenate paste at the rate of 5 lb. per 100 gallons.

Hereinafter these four sprays will be designated as 1, 2, 3 and 4.

TABLE I. PERCENTAGE OF BUD MOTH LARVÆ FOUND IN SPRAYED AND UNSPRAYED PLOTS ON JUNE 10-12

Spray	1	2	3	1, 3	1, 2, 3	1, 2, 3, 4	3, 4	1, 3, 4	2, 3	2, 3, 4	Check
Per cent bud moth left.	16.3	5.8	8.0	6.8	6.1	1.6	3.8	(6.6) 2.5	9.1	2.6	19.3

A few explanations are necessary with reference to the above table. It will be noticed that two figures are given as the result of the combination 1, 3, 4. This is owing to the fact that one tree in this lot gave an exceptionally high count while all the others were uniformly low. Including this tree the average count was 6.6, but excluding it as an abnormal tree the average count was 2.5 which on comparison with the other figures is seen to be nearly what would be expected.

The percentage of larvæ found on the plot sprayed with 2 and 3 was larger than that found on the plots sprayed with either 2 or 3 alone. The only explanation which I can give for this anomaly is that the local area in the orchard was prob-

ably worse affected originally than the other parts of the orchard.

Because of the fact that the spray carried by the wind might influence the results of experiments the plots were so arranged that as far as possible each plot received the same spray as the one immediately to windward of it, thus lessening the error resulting from the interference of sprays. As an exception to this arrangement, it may be mentioned that the plot which received spray 2 only, was on the leeward side of the orchard so that the count obtained was possibly lower than it should otherwise have been. In fact, if we eliminate the row nearest the other trees, the average count would then rise to 8 per cent.

TABLE II. REDUCTION OF INJURY DUE TO THE DIFFERENT SPRAYS PERCENTAGES

Spray.....	1	2	3	1, 3	1, 2, 3	1, 2, 3, 4	3, 4	1, 3, 4	2, 3	2, 3, 4
Reduction, per cent.....	15	70	58.5	64.8	68.4	91.7	80.3	(65.8) 87.0	52.8	86.5

From the foregoing tables it will be seen that the spray applied as soon as the leaves were fully expanded was the most effective of any single spray. The spray applied three days before the opening of the flowers was next in effectiveness, and the one applied as soon as the larvæ began to enter the buds was, contrary to the general opinion, not very effective. The effect of the fourth spray used singly was not tried, but its effectiveness in combination can be seen from the figures given above.

Where the usual spray calendar is followed there should be little difficulty in keeping this insect in check as the second and third sprays in the calendar correspond to the third and fourth given above, and it will be observed on referring to the figures that these formed the best two-spray combination.

II. SUMMER SPRAYING

On hatching, the larvæ of the bud moth almost immediately commences to feed on the under side of the leaf. A few hours later it builds itself a small tube within the shelter of which it continues feeding. It is an obvious assumption that if lead arsenate or some other poison is sprayed on the leaves before the eggs hatch, the first mouthfuls of the newly hatched caterpillar will be fatal. The results of experiments performed in 1914 and 1915 justify this assumption.

In 1914, several pairs of bud moths were placed on the branches of two small apple trees. These branches, with the bud moths, were enclosed in cheese cloth bags to ensure the laying of numerous eggs on each.

After the eggs were laid, the bags were removed and the trees sprayed with a suspension of lead arsenate in water at the rate of three pounds of powdered arsenate per hundred gallons. The results were entirely satisfactory. No accurate count was kept of the number of eggs laid, but a reduction of 80-85 per cent is considered a conservative estimate.

In 1915 the experiment was repeated. Three seedling apples were used which we will designate A, B, and C. These seedlings were enclosed in cheese cloth bags and several adult bud moths were placed on their branches.

The record of the experiment is as follows:

June 28.—A, 110 eggs laid.

B, 240 eggs laid.

June 29.—C, 162 eggs laid.

June 30.—Sprayed A and B with lead arsenate suspension (2½ pounds powder per 100 gallons). Kept C unsprayed as a check.

July 8.—The eggs on A and B hatching and the caterpillars starting to feed.

July 9.—Eggs on C hatching. On A and B many dead larvæ could be observed.

July 11.—On this date a count was made of the three seedlings, giving the following results:—

On A there were two living caterpillars on their tubes, and on B six. In each case there were several dead ones in their tubes, and a very large number dead on the leaves, which were poisoned before they had an opportunity to form a tube.

On C (unsprayed) there were 155 living larvæ, which, with a very few exceptions, had already formed their tubes.

July 14.—The plants were examined again on this date: no living larvæ could be found on A and only one on B. On C they were all healthy and were busy skeletonizing the leaves.

It will be seen that the summer spraying was practically 100 per cent efficient. It is true that the experiment was conducted under ideal conditions, that is on small trees which could without difficulty be thoroughly sprayed, but there is no reason for doubting that with careful spraying the summer application will be very effective in controlling this pest. I say careful spraying because it is necessary that the under side of the leaves be sprayed as the young caterpillar almost invariably feeds on this side.

As to the advisability of applying the summer spray a great deal depends on the circumstances. In a mild attack it is doubtful whether it would be advisable to apply this

spray in addition to the spring applications. In a severe attack, however, where the spring sprays have failed to control the insect, the application of this spray about the end of June is strongly advised. In any case, if it is necessary to spray at this time for aphids, I should advocate the addition of lead arsenate at the rate of two and one-half to three pounds per 100 gallons of spray.

Next year further experiments on the control of the bud moth will be conducted at different points in the province, and at the conclusion of these experiments a full account of the life history, habits and control of the bud moth will be published.

ONTARIO

HORTICULTURAL EXPERIMENT STATION

BY F. M. CLEMENT, B.S.A., DIRECTOR

At the Vineland horticultural experimental station, with the aid of funds received under the provisions of THE AGRICULTURAL INSTRUCTION ACT, the Ontario Department of Agriculture is endeavouring to devise ways and means of making into a merchantable product some fruits that would probably otherwise go to waste. Peaches are to receive first attention and an attempt is to be made to use them for the manufacture of

cider, vinegar, syrup, jam or anything else that may appear possible. The experimental canning factory operated four years ago is again being fitted up and the work is to be hastened as rapidly as opportunity will permit. A portion of the federal grant is also being used in the equipment of a working laboratory. This work is in charge of Mr. P. E. Culverhouse.

FARMERS' AUTOMOBILE TOUR

IN the first week in July the first organized automobile tour of Ontario farmers took place. It was made up of about 40 farmers of the county of Dufferin, and the party was organized and the itinerary mapped out, and carried out, under the supervision of H. A. Dorrance, District Representative of the Ontario

department of agriculture at Orangeville. So general has the purchase of automobiles on the part of the farmers in this province become that they had very little difficulty in getting a few farmers to take their cars for the use of their neighbours who were not so fortunate as to own cars.

Accordingly the party started out

and first of all visited the neighbouring county of Peel, where there are a number of very fine stock farms, including the largest Jersey herd in the British Empire. They also visited a number of fruit and truck farms at the south end of the county, and from there went on, through the city of Toronto, to the county of Ontario. There they visited the stables of well known importers of high class Clydesdales, Shorthorns, etc., They

then on to the prison farm near Guelph, from whence they returned home.

They were most enthusiastic over the success of their outing and many wanted to arrange another trip at once, while others, who had not accompanied the party but heard about the trip, wanted to organise a new party. Not only was their trip a source of enjoyment but also a source of education. Immediately on his



PART OF THE AUTO PARTY IN FRONT OF THE PARLIAMENT BUILDINGS, TORONTO,
WHERE THE PROVINCIAL MINISTER OF AGRICULTURE WAS MET

returned to Toronto for night and in the morning visited the Minister of Agriculture at the Parliament Buildings, where incidentally a moving picture was taken by the Department of Agriculture, for use in its departmental propaganda. There had been a heavy rain during the night and this somewhat interfered with the enjoyment of the first part of the trip on their last day, but they managed to visit one or two good stock farms in the vicinity of Weston and

return one of the farmers undertook plans to secure a pure bred milking Shorthorn bull for his neighbourhood, while others adopted advanced ideas which they had picked up during the itinerary.

There is no doubt that with the improvement of the highways and more general purchase of automobiles this farmers' automobile tour will become more and more a feature of rural life in this province.

CLOVER SEED AND OTHER CROP PROSPECTS IN NEW ONTARIO

BY T. G. RAYNOR, B.S.A., SEED BRANCH DISTRICT OFFICER FOR EASTERN AND NORTHERN ONTARIO

THE prospects for clover seed production in Northern Ontario this year are very poor. The killing out of the clover is attributed to the light snowfall last winter and the unusually heavy formation of ice on the meadows in the spring. A few good fields of alsike are to be found near Emo in the Rainy River district and around Oxdrift in the Dryden district. In the vicinity of Providence Bay and Mindemoya, Manitoulin Island, considerable of last year's seed is in the farmers' hands. They were too late in getting it hulled for the market last spring. In spite of the poor crop this year, there are good prospects for clover seed production in New Ontario. In the Dryden district farmers have received a gross return of from \$50 to \$100 per acre for alsike seed. A number of clover seed hullers have been brought into the district and clover seed production is likely to become one of the profitable branches of farming.

In Northern Ontario, the Sault district and Manitoulin Island have good hay crops. The red and alsike clovers came along late in June and thickened up the timothy meadows, making a heavy cut of mixed hay. The grain crops on Manitoulin Island are on the whole good and about the Sault and north shore except on wet lands. There will be more hay and grain along the north shore than will be needed for local requirements.

The Thunder Bay district with the Rainy River and Dryden districts will have enough for their own wants but not much surplus except in some lines of stock. These districts will have rather a light hay crop this year.

A large acreage was planted with potatoes but the wet weather caused much of the seed to rot. A good deal was replanted and what was not was quite patchy. The soft rot in potatoes is prevalent. The crop on light, well-drained land was looking fine.

The hoed crops were not very promising. There were many blanks in corn, mangels and turnips patches as well as potatoes. All the hoed crops were improving with drier and warmer weather.

This year demonstrates the need for under-draining all through the clay belt. Considerable drainage work is being done with the government ditching machine under the direction of the district representative.

One could note progress all through the north country as reflected in the farm buildings and stock. It looked encouraging to see so many flocks of sheep, especially on the north shore and Manitoulin Island. Much good work has been done upon the roads by grading them and in many places putting on good coats of gravel.

NOTES FROM DISTRICT REPRESENTATIVES

SUPPLIED BY C. F. BAILEY, B.S.A., ASSISTANT DEPUTY MINISTER OF AGRICULTURE

HALTON COUNTY

H. R. Hare, B.S.A.:—

"I called at a number of the schools where I had made arrangements to meet the presidents of these various schools and drove them to Hornby, where a meeting of the School Fair Board had been arranged for. Eleven schools are in the district and all were represented. They were strangers to one another and naturally at first were a little backward. However, by calling the roll, whereby they responded by giving a sketch of the school fair work in their schools they became more at home. Various officers were elected and these officers immediately took charge of the meeting. They elected their grounds committee, tent committee, live stock committee and sports committee. In addition to these, on their own suggestion they elected a refreshment committee whose business it will be to provide coffee on the day of the fair, to be sold from the booth at lunch time and also to sell ice cream and perhaps other refreshments during the afternoon. The proceeds from this are to be turned over to the school fair war fund. The enthusiasm exhibited throughout the whole meeting was an inspiration to the district representative.

"One afternoon I spent with one of the Short Course boys, covering the whole farm. He is taking an additional interest in farming this year and it is a source of pleasure to the parents to find that he is becoming more contented with the farm life and is this year seeing more possibilities of the business and intends to stay with it. He is in the corn and mangel competitions."

GREY COUNTY

F. S. Reeker, Outside Assistant:—

"The hog feeding competition is going to be a hummer. We called on Mr. Geo. Kennedy who showed us some hogs that he was feeding entirely on oat chop and he reports that he never had hogs that made such excellent and cheap gains. Mr. Kennedy tried the oat chop as a result of a lecture giving last year's hog feeding competition reports. The winner of the competition fed nothing but oat chop.

"We also visited an alfalfa experiment on the farm of Mr. John Thom of Walter's Falls. It was a three plot experiment, each plot containing 1/80 of an acre and the varieties tested on two of the plots were Grimm's Ontario Variegated. The seed for

the other plot was purchased from the local store. The first cut had just been cut and weighed and the yields from Ontario Variegated and Grimm's were the same, being 190 pounds from the plot, and from the other plot it was only 120 pounds. This certainly gives convincing evidence of the value of sowing the best varieties of alfalfa seed.

"We also visited some corn fields in Derby township which had been sown by a syndicate planter. In every case the growers stated that the planter paid for itself the first year by saving labour in cultivation."

GREY COUNTY

H. C. Duff, B.S.A.:—

"Our work in assisting farmers to combat the grasshopper outbreak was extended considerably west of the district in which we had been giving assistance during the previous week. We held one meeting at Berkeley and then made arrangements with a committee to visit the farmers not represented at the meeting. No difficulties were experienced in persuading the farmers to treat their fields. We should like to be able to give an estimate of the number of acres treated, but such is impossible. All the stores in Markdale have sold every pound of bran, Paris green and black strap that they had on hand. What is being used now is coming from Berkeley, Holland Centre and Chatsworth. There are two farmers who treated with a mixture of molasses meal and Paris green. It was their opinion that this mixture could not be improved upon, but we will have definite information later, as the two mixtures are being tried out together. On one farm I attempted to estimate the number of grasshoppers that were killed to the square foot along a fence where they had been particularly plentiful. The task was somewhat difficult owing to the fact that a heavy rain had fallen since the land had been treated. However, there were at least 1,500 and possibly a good many more. It really looked as if the farmer had been trying to fertilize the land with grasshoppers."

THUNDER BAY DISTRICT

G. W. Collins, B.S.A.:—

"On the 22nd of June a special delegation from the Farmers' Clubs, consisting of 14 farmers, met in this office for the

purpose of organizing a farmers' co-operative association. F. C. Hart, B.S.A., Director of the Co-operation and Markets Branch of the Ontario Department of Agriculture, was present to direct the formation of the organization. After considerable discussion on the question of marketing, the meeting decided to organize and that the name of the association shall be the Thunder Bay Co-operative Association, Limited. Mr. Hart was asked to prepare a system of by-laws suitable for the association. The by-laws were dealt with very carefully, clause by clause, and finally were approved by the meeting. The method of raising capital in this association is by the note system. The notes will be placed in the association's bank as collateral. An application committee was appointed to apply to the Provincial Secretary for a charter.

"On July 7th we held a milk testing demonstration at Hymers. We took our Babcock tester and necessary equipment up there for this work and it proved very interesting and successful. Following the demonstration in testing which was given in the evening short course lectures were given on the care and handling of milk on the farm. Previous to this demonstration we sent out instructions regarding the sampling of the milk for testing purposes, and many farmers were there with samples, anxious to find out which cow gave the richest milk. Some of the farmers were disappointed in that their samples tested lower than they expected, while others were pleased to learn that their samples were rich in butter fat; 25 samples were tested, 50 people present."

FRONTENAC COUNTY

C. Main, B.S.A.:—

"I inspected two of the oat plots in the acre profit competition. One interesting feature of this work is the fact that the oats for one of the competitor's plots were treated with formalin for the prevention of smut, while the main crop of oats grown by the competitor's father was sown untreated. The result is that you can scarcely find one head of smut in the plot grown by the son in the competition, while the main crop grown by the father is about one-quarter smut.

"Inspected acre plot of corn, erecting sign stakes designating the seven different varieties on each of the plots. I found the corn to be making favourable growth and the owners are already admitting that they think the hill system is the proper method of planting corn, more particularly if weeds are prevalent.

"I have been doing some work in connection with the control of flies on cattle. Several people have been taking much

interest in this method of control, as it proves to be cheaper and equally efficient with the patent treatment. The treatment is as follows:—

- 1 gallon of sour milk, or slightly sour,
- 1 " " coal oil,
- 1 " " fish oil,
- 6 ounces oil of citronella.

The sour milk and coal oil are mixed together first, then the fish oil and oil of citronella are mixed. Now add the aggregate together and mix thoroughly for ten minutes. This gives the stock solution. Upon using, one part of the stock solution to two parts of water is mixed and sprayed, this spray being applied once a day."

PEEL COUNTY

J. A. Carroll, B.S.A.:—

"We are still placing quite a number of men and the results of our efforts in this connection have been quite satisfactory; between 60 and 70 labourers have been sent out since the middle of June and no doubt we shall continue to supply this help."

NORFOLK COUNTY

Geo. Wilson, B.S.A.:—

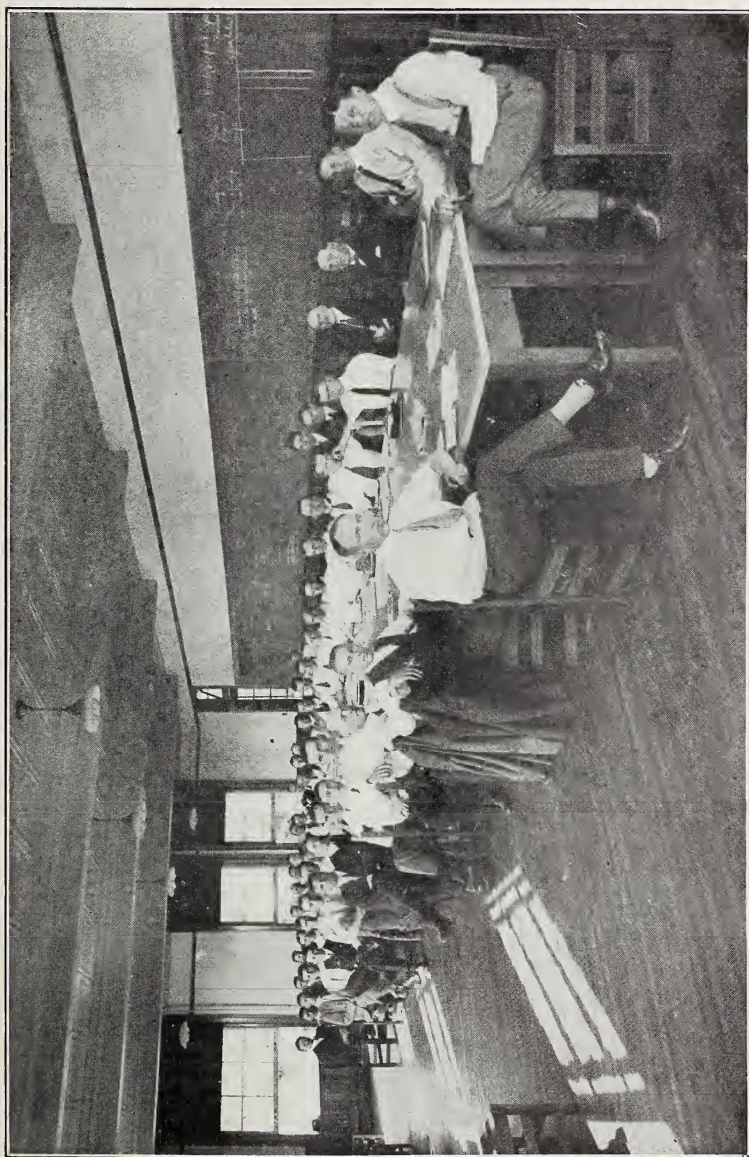
"Hogs entered in the feeding hogs for profit competition were also examined and details concerning the contest discussed with the boys. Most of the boys are weighing the hogs frequently and noting gains from different feeds. It was gratifying to know that the boys who had been supplied with milk testers were keeping accurate record of their cows. One young man, Clayton Mansfield, was found to be keeping accurate accounts of his poultry, the accounts comprising amount and kinds of food fed, number of eggs sold locally, those used in the house and those used for setting. The net receipts were estimated monthly and showed a nice profit.

"I attended the meeting of the Middleton township council to ask for a grant of \$15 to the Rural School fall fair. This was granted and a special prize of \$1.00 for Davies Warrior potatoes grown by the children given by one of the members of the council."

YORK COUNTY

J. C. Steckley, B.S.A.:—

"In visiting one little girl's plot I was surprised to learn of her success with the bred-to-lay chickens which she raised last year. She sold four cockerels last fall at two dollars each and made nearly as much more by selling eggs, along with her prize money at the fair."



DISTRICT REPRESENTATIVE CONFERENCE AT THE ONTARIO AGRICULTURAL COLLEGE, QUELPH, JULY 14 TO 17, 1915,
A REPORT OF WHICH APPEARED IN THE AGRICULTURAL GAZETTE-FOR AUGUST

SIMCOE COUNTY

J. Laughland, B.S.A.:—

"One pleasing feature of the school fair work is the fact that so many farmers have splendid small fields of No. 72 Oats grown from seed produced on the pupils' plots last year. Many of these men will have enough seed by next year to sow their whole acreage of oats. Other crops are being multiplied in the same way."

MIDDLESEX COUNTY

I. B. Whale, B.S.A.:—

"In regard to the plot inspection for the school fair, both the assistants report much interest on the part of the pupils and what is further they found that the parents were using the product of last year's seed in their field crops. In every case the potatoes, corn and oats were superior to anything that was growing at home. In the Melbourne, Kilmartin and Wardsville district the Wisconsin No. 7 corn which we distributed each year has proven very satisfactory and shown to the people the advisability of securing seed on the cob and having it well matured. In several places they found four and five acres of corn the product of one cob distributed to the pupils last year. In many instances the farmers are looking for the product of the boys' and girls' plots this year to give them a start in good seed for next year. Never before was I so thoroughly impressed with

the need of securing the very best seed for the school fair, and if the school fair is doing nothing else in our county it is laying the foundation for better seed, hence better crops on many of our farms.

"I am pleased to learn of the success Mr. Forsyth had with milk testing demonstration at West McGillivray. The farmers from the other part of the township have also asked for a demonstration and Mr. Forsyth mentioned to me the other day that several of the farmers had already decided to fatten a number of their cows as they were boarders. The milk testing has awakened an interest in that section and shown the people the folly of keeping poor milkers and poor testing cows."

WENTWORTH COUNTY

R. L. Vining, B.S.A.:—

"I have been looking over the corn variety test plots this week, and am much pleased with the showing that these plots are making. Gage Brothers, in Glanford, told me that they were very much disappointed in the appearance of the seed; it was not nearly as good in appearance as some which they obtained from an Essex county grower; but the corn which came up in our plot gave a 100 per cent stand, while they found it necessary to go over the rest of the field and replant it. They agree that \$1.50 a bushel extra for guaranteed corn would be a pretty good investment."

Agriculture is the meeting point of many sciences. So also is home-making. For both scientific education is necessary. And to consider one without the other is to have a one-sided development. It is useless to educate the farm boy to be a better farmer, to apply principles of science and business to farming without a corresponding education of the farm girl in the principles underlying home-making.—*Co-operation in Agriculture.*

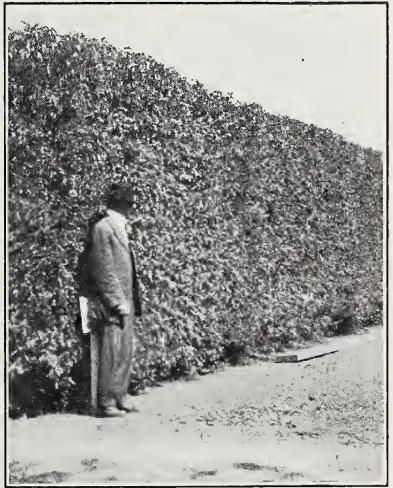
Those farmers and stock raisers who are fortunate enough to have on hand a sufficient supply of breeding animals, especially well-bred cows, to form a basis for future herds, and will provide proper sires, give them all good care and remain steadily in the ranks of live stock producers, will find themselves a few years hence in the foremost ranks of the continent's most prosperous citizens, with their herds and flocks growing in value, their acres growing in fertility, and their bank accounts growing steadily with the combined growth of live stock and increasing crop yields.—*Arthur G. Leonard, President of the Union Stock Yards, Chicago.*

MANITOBA

DISTRICT REPRESENTATIVES AT BRANDON

A portion of one week was spent by the field representatives of the Manitoba Department of Agriculture in visiting the fair at Brandon and the Dominion Experimental Farm there. In addition to six representatives, the party included Mr. S. T. Newton, superintendent of extension service, Manitoba Agricultural College; Prof. T. Harrison, of the field husbandry department, and the Deputy Minister of Agriculture, S. A. Bedford.

Close inspection was made of the different experiments in grain, grasses and live stock which are being conducted on the Brandon experimental farm. The visiting representatives were particularly interested in the different series of rotations under test and impressed with the decided superiority of some of these and the undesirability of others for this province.



CARAGANA HEDGE, EXPERIMENTAL FARM, BRANDON



MANITOBA DISTRICT REPRESENTATIVES INSPECTING BANNER OATS ON EXPERIMENTAL FARM, BRANDON, 1915

While all the crops on the Experimental Farm this year are good, some are exceptionally so and if favourable weather follows, the yield in some instances will be immense.

It is anticipated that this visit of the representatives to the farm will be of direct benefit to them in their work throughout the province, and that the knowledge gained will be disseminated by them.

While together in Brandon a meeting of the representatives was held in a classroom of the Brandon college, a thorough discussion of the extension work taking place. Addresses were given by Mr. Newton, Prof. Harrison and Deputy Minister Bedford, and the district representatives discussed these addresses freely. Much additional work was planned for the coming year.

SASKATCHEWAN

AGRICULTURAL LEGISLATION

AT the session of the Saskatchewan legislature, which closed in June, several measures relating to agriculture were passed. Among these was an act to amend the school grants, and providing that school garden exhibitions may rank as institutes so far as attendance of teachers is concerned in connection with the payment of grants to school districts. It is provided that where in any district the majority of the pupils are in the lower grades, or where a sufficient library is already in existence, the board shall expend the said sum for any other purposes set forth in the regulations of the department in that behalf and shall file with the department a certificate of such expenditure. This means that the sum of ten dollars, for the expenditure of which a certificate must be filed with the department before the grant for the second term is payable, must be spent for some special purpose set forth in the regulations of the department. Those regulations will suggest expenditures of a small sum annually on the improvement of school grounds and buildings and the provision of desirable equipment.

IMPLEMENT SALES

Founded on the report of the commission of inquiry into agricultural

implement sales, an act was passed to be known as the Farm Implement Act, one of the provisions of which is that the implement companies must file with the Minister of Agriculture a price list, which must be adhered to, of all implements and repairs for same which they sell. All of the recommendations of the commissioners noted in THE AGRICULTURAL GAZETTE for August, have been adopted in the contracts regarding warranties, the work which the machine will do and the keeping of repairs. The purchaser of a "large" implement, which means a traction or portable engine, a separator, engine ploughs or discs, finding that any machine does not work satisfactorily, may require the vendor to come and make it perform well, and if he fails to do so the purchaser may reject the machine and receive back all moneys or notes given by him for it, or he may retain the machine and hold the vendor liable for the difference between the value of the machine as it is and the value it would have had if it had fulfilled its warranty, the valuation to be settled by arbitration. Several clauses protecting the purchaser have been included in the contract forms and it is expected that under this Act many of the grievances which farmers have had against the implement companies will disappear.

THE WIFE'S RIGHTS

Under the new Act respecting homesteads, the wife's rights in the homestead which may have been mortgaged for implement debts are protected, and under amendments to the Exemptions Act articles and horses exempt from seizure under that Act may still be selected and kept by the farmer although chattel mortgage has been given upon them. Under amendments to The Land Titles Act no lien upon land contained in any contract for the sale of implements will be valid against the land and no mortgage may be taken upon land to secure implement debts until six months' delivery of the implement. These changes are all in accordance with the recommendations of the commission.

CO-OPERATIVE ASSOCIATIONS

In the Agricultural Co-operative Associations' Act it is provided that in so far as transactions in farm supplies are concerned, an agricultural co-operative association shall, after December 31, 1915, sell only to its shareholders or to the members of the Saskatchewan Grain Growers' Association. Associations will in future be allowed to purchase goods on credit from other agricultural co-operative associations, or from any other company, association or society incorporated by special Act of this province, having objects wholly or in part similar to those of agricultural co-operative associations (which includes the Saskatchewan Grain Growers' Association). Provision is also made that the directors may pledge the credit of the association for moneys temporarily borrowed to pay for goods purchased, or expenses incurred in connection therewith, but a definite provision has been inserted that associations must sell supplies only for cash.

GRAIN GROWERS' ASSOCIATION

Fifteen sections have been added to the Act incorporating the Sas-

katchewan Grain Growers' Association, the effect of which is to generally increase the financial powers of the Association. It is now permitted to act as wholesale purchaser, shipper or dealer in both the products of and the supplies necessary for a farm, and anybody so acting may do anything conducive to this object. It is permitted to pledge its credit according to the methods usually adopted by any commercial company in the ordinary way of business, and in addition it may issue bonds or debentures, the only restriction being that the issue, sale and transfer thereof must be limited to members of the association, to the registered agricultural co-operative associations, to associations having similar objects, and the members and shareholders thereof. Under Section 10 and the amendment to The Agricultural Co-operative Associations Act, the two associations may buy and hold each other's securities, enter conjointly into any enterprise, share profits, lend money to and guarantee the contracts of each other. Section 14 provides that "the liability of members of the association shall be limited to the amount (if any) unpaid for membership fees or unpaid upon any bonds or debentures respectively held by them.

HAIL INSURANCE

The title of The Hail Insurance Act, 1912, has been changed to The Municipal Hail Insurance Act. The Act has been redrafted and simplified in accordance with the experience of the last three years. The date for notice of withdrawal from the scheme has been changed from May 1 to June 1. The withdrawal privileges have been changed and slightly extended. They now include lands of three classes: first, an area equal to one or more quarter sections if completely enclosed in a substantial fence and used for grazing or hay purposes only; second, an unpatented quarter section with less than twenty-

five acres under cultivation, held by entry from the Dominion; third, one or more quarter section with less than twenty-five acres under cultivation, the remainder of which is substantially fenced and used only for grazing or hay purposes.

The penalty of 1 per cent per month after January 1 has been struck out, so that in future the only penalty will be \$1 per quarter section.

The minimum percentage of damage has been reduced from 10 to 5 per cent.

Under an act respecting seed grain, food and other relief the Dominion Government is granted the same facilities for securing repayment of sums advanced for relief as were provided for the Government of Saskatchewan under The Act Respecting Seed Grain of 1908. Sums advanced by the Dominion Government may now be made a charge upon

the real property of the person receiving the relief, with interest at 5 per cent and this charge has priority over every other claim against the land, whatever liens, taxes or other incumbrances.

APPROPRIATIONS FOR AGRICULTURE

The following appropriations were made at the recent session of the legislature for agricultural purposes:

Assistance to general agricultural interests.....	\$73,600
Assistance to live stock industry..	20,600
Assistance to dairy and poultry industry.....	84,600
Publicity and statistical work....	22,700
Bacteriological laboratory.....	8,400
Weed control and game protection	20,900
Bureau of Labour.....	8,900
Miscellaneous services.....	17,100
Manual training and domestic science organization.....	1,800
Agricultural Extension Work.....	24,000
Total.....	\$282,600

BETTER FARMING TRAINS

SASKATCHEWAN'S vision to-day is of full granaries and prosperity. A year ago a very considerable part of the province faced crop failure and its accompanying embarrassments. "Wet" years as well as "dry" years in parts of Canada's north-western provinces come unannounced, and the successful farmer is the one who tills his land to conserve moisture in anticipation of a dry or even an average season and in the way which best insures immunity from the effects of an early frost when there occurs more than the usual rainfall. "Luck" comes to the careless farmer only in a year of more than average rainfall, and in the "dry" years his income dwindles to the vanishing point. Frequently, however, the man is sound at heart and only lacks experience, and while experience is considered on competent authority to be the best teacher, her course is long and somewhat expen-

sive. Thus it seems to the thousand and one representatives of urban communities who forsook the counter, workshop or the office for a home-stead on the wide Saskatchewan prairie.

PROVINCIAL NEEDS

No one doubts that the people of Saskatchewan as well as the people of Canada as a whole need to have more quarter sections producing wheat and cattle, and eggs and bacon. Our institutions may have been developed more rapidly than the comparatively sparse population of the country warranted. Saskatchewan has more railway mileage per capita than any other Canadian province. Her public roads, her schools, her municipal institutions are in advance of most new countries. And interest payments mature in connection with railway and municipal bonds as well as farm mortgages, and money should

be made—not borrowed—to meet them. Therefore more production is necessary, and more people are wanted. In fact there is still a real immigration problem notwithstanding the great accomplishments of the past. Hon. W. R. Motherwell, Saskatchewan's Minister of Agriculture, regards this problem as good as solved as soon as the present rural population becomes properly installed and shares in the prosperity which will be theirs when they learn to utilize fully the great possibilities of Saskatchewan's soil and climate. In other words

ter farming " train. The first appearance in Saskatchewan of this great aid to agricultural instruction was almost a score of years ago when the "seed selection special" covered the greater part of the railway mileage in the province. This year both the Canadian Pacific and the Canadian Northern Railways provided trains for the use of the Department of Agriculture and the College of Agriculture in carrying to Saskatchewan farmers the information which their investigations have gathered for them. The trains con-



STAFF OF TEACHERS AND DEMONSTRATORS

Left to right—Prof. R. K. Baker, Miss M. Trood, Arthur Fawcett, Miss Jean Archibald, L. E. Kirk, Mrs. L. E. Kirk, F. H. Auld, Prof. G. H. Cutler, Mrs. W. W. Thomson, W. W. Thomson

the best immigration agents are the men who have made good on the farm. Of course it is generally admitted that in addition to the difficulties due to inexperience and arising from the problems incidental to production, there are other natural and artificial handicaps affecting the business of farming, but that is another story.

THE TRAIN

One of the many agencies utilized in Saskatchewan to promote the prosperity of the farmer is the "bet-

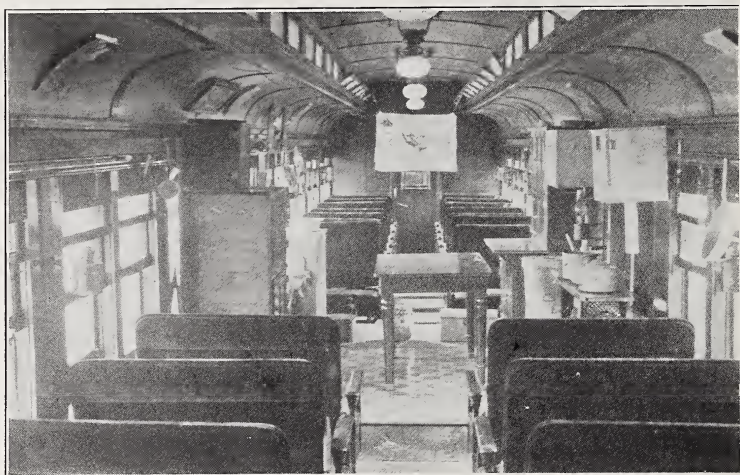
sisted of sections devoted to live stock, crop production and household science. There was also a department for the boys and girls, and a play car under the supervision of careful attendants for the entertainment of the little tots while their mothers were enjoying the lectures and demonstrations.

A three hour stop permitted a carefully prepared program of lectures to be given at each point. The "crop production" lectures were given during the first week by W. W. Thomson, B.S.A., director of co-

operative Associations, Regina; Prof. G. H. Cutler, of the Saskatchewan college of agriculture, and T. L. Guild, B.S.A., district representative of the Department of Agriculture, with headquarters at Shaunavon. Mr. Thomson dealt with the various phases of soil cultivation, Prof. Cutler explained the characteristics of the different varieties of field crops, while Mr. Guild identified weeds and described the best methods to eradicate them.

ings. The exhibit of poultry buildings and appliances also attracted a great deal of attention and inquiry. In this car a large supply of bulletins and leaflets covering every phase of agriculture was displayed for free distribution. One of these cars was in charge of Arthur Fawcett of the Saskatchewan Department of Agriculture.

Perhaps no part of the train was more appreciated or better understood than the nursery car, where the



THE POULTRY LECTURES WERE GIVEN IN THE HOUSEHOLD SCIENCE CAR

BOYS' AND GIRLS' SECTION

Mrs. W. W. Thomson of Regina and L. E. Kirk were in charge of the boys' and girls' section. Lectures illustrated by coloured lantern slides describing the birds of Saskatchewan and the insects injurious to garden and field crops proved of great interest to the boys and girls. At many places the programme was supplemented by an illustrated address by Prof. Baker on the housing of poultry and the care necessary for the successful marketing of eggs.

The "farm models" car contained models of farmsteads and farm build-

children under school age played while their parents listened to lectures in the other sections of the train. A generous pile of sand and a long slide, with toys as an entree, provided entertainment for the wee folks. This department was under the direction of Mrs. L. E. Kirk and Miss J. Gillespie.

CONVENIENCES

Each train carried a sleeper and a diner for the accommodation of the lecture staff. The personnel of the lecture staff changed from week to week and during the itinerary a part of the programme was taken by

such well known authorities on agricultural subjects as Dean Rutherford, Professors John Bracken, A. M. Shaw and A. R. Greig; A. F. Mantle, Deputy Minister of Agriculture; J.

Reed, B.S.A., Regina. Hon. W. R. Motherwell, who is convalescing after a serious attack of diphtheria accompanied the trains as much as his strength would permit. Thos. S.

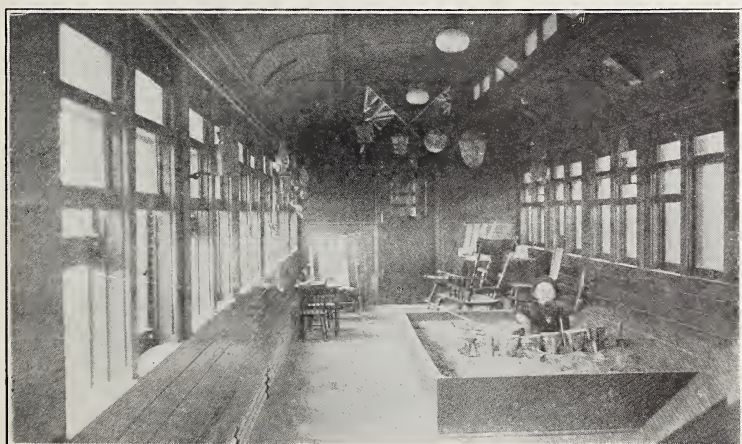


PUPILS OF NINE SCHOOLS IN ATTENDANCE AT INSTOW

C. Smith, Live Stock Commissioner; J. L. Brown, W. Betts, and E. H. Hawthorne, district representatives of the Department of Agriculture; J. A. Mooney, Regina, and F. H.

Acheson, general agricultural agent, represented the C.P.R.

The trains traversed over 2000 miles and were scheduled to stop at 135 stations. As a rule these were



AN END OF THE NURSERY CAR; "BETWEEN STOPS"

points not visited last year, and many of them were sidings with barely the earmarks of villages. The attendance at the first 36 meetings was about

10,000 people and if this record were maintained the total number of persons served by the trains this season was approximately 38,000.

WEED ERADICATION AND OTHER MATTERS

THE provincial Agricultural Department estimated that 15,000 men were required for the harvest. Five thousand were expected to come in from the cities and towns and the railways were relied upon to bring in the remaining 10,000 from the east. Many foreigners were offering their services and the department urged farmers to accept them as the ranks of the British bred in the west have been depleted by the war.

It is estimated that from 15 per cent to 60 per cent of injury to crops was caused at Waldheim, Hepburn, Dalmeny, Warman, Young, Venn, Nokomis, Cuper, Lipton, Abernethy and Weyburn by hail on July 22. The damage was covered by insurance to the extent of 75 per cent.

The Department of Agriculture and the three railway lines in the province have conducted an aggressive campaign against weeds. The

weeds commissioner sent an inspector and the companies provided a gasoline road motor and driver. Section foremen were instructed on the recognition of noxious weeds. A circular letter has also been sent to urban municipalities pointing out the danger incurred from weed-seeds and urging that they be suppressed and samples forwarded to the department. Special attention is directed to the sow thistle, every patch of which that may be found is to be dug out.

An order has been received by the provincial dairy commissioner for 24 loads of government creamery butter, representing about 600,000 lb.

An object of attention at the Regina exhibition was a model in butter of a quick firing gun, with an artilleryman at the breach, made under the direction of Mr. C. Calvert of the dairy branch staff.

SERVING THE EMPIRE

The following members of the staff of the Saskatchewan Department of Agriculture have proven their patriotism by enlisting: Mr. A. F. Mantle, Deputy Minister; Mr. J. C. Smith, Live Stock Commissioner; Mr. H. N. Thompson, Weeds and Seed Commissioner; Mr. A. J. McPhail, Field Agent; Mr. E. H. Hawthorne, Field Agent; Mr. Wm. Betts, District Representative; Mr. J. L. Brown, District Representa-

tive; Mr. W. Waldron, Assistant Secretary of Statistics. Messrs. Mantle, Smith and Betts have already gone into active service, the first named with the rank of captain in the 68th C. E. F., the second with the rank of lieutenant in the same corps, and the third as sergeant in the 3rd Battalion, Princess Pats. Messrs. Thompson, McPhail, Hawthorne, Brown and Waldron expect to leave almost at once.

PURE BRED STOCK SALE

THE Saskatchewan Sheep and Swine Breeders' Associations have decided to hold a joint sale of pure bred males and females, of both classes of stock, at the Exhibition Grounds, Regina, on October 27th.

The following resolutions were passed at a recent meeting of the joint executives of the Sheep and Swine Breeders' Associations and the sale regulations will be changed accordingly:—

"Individual entries of sheep will be limited to eight head of males and twelve head of females; and of swine to six head of either or both sexes.

"Sheep classes to be thrown open to breeders of the prairie provinces.

"The name and number of the sire and grandsire of all animals entered in the sale will be asked for on the entry form and will be included in the sale catalogue.

"An upset price of \$20 will be placed on all animals one year old and over; and \$15 on animals under one year."

ALBERTA

EXPERIMENTAL STATION EXHIBIT

THE Lacombe Experimental Farm is making an exhibit that is attracting much attention at the various exhibitions in the Northwest. Included in the exhibit is a model of a stave silo, erected at the station last year. The silo, which was made of 2 inch by 6 inch studs, and which is 30 feet high, cost, roughly, \$100 for material. There is also a collection of small fruits, including red and white currants and strawberries. The black currant "Beauty" on exhibit made a profit of \$300 per acre last year. A special feature of the exhibit is the

forage grasses and crops. The variety of alfalfa on the stand, known as Grimm, last year yielded $1\frac{3}{4}$ tons to the acre. Among other samples are red clover and alsike, both of which do well in Alberta. Grasses on the stand are timothy, brome, western rye grass and Kentucky blue.

There is also an exhibit of noxious weeds common in Alberta. Each mount shows the weed in every stage of development. Another interesting feature is a bee outfit in miniature.

In the August number of THE AGRICULTURAL GAZETTE a typographical error occurred in the article "Two Modern Country School Houses". In the second paragraph of the right hand column on page 805 the following occurs:

"The lighting, heating and ventilation of the classroom are nearly ideal. The windows occupy practically an entire side, running from the ceiling to three and one-half feet above the floor". This should read "two and one-half feet above the floor."

PART III

Rural Science

THE TEACHING OF AGRICULTURE AND WHAT IT SIGNIFIES

BY "OBSERVER" AT RURAL SCIENCE SUMMER SCHOOL

THIS year, at the Ontario Agricultural College, 76 public school teachers and 28 high school science teachers are learning, in the atmosphere of the farm, how to make the activities of rural life a basis of intellectual training for the pupils in country schools.

In past years, only about one-third of those who took the first half of the course came back to complete the second year; this year, fifty per cent have returned.

Why more do not conclude the course and secure their certificates is hard to decide. Perhaps it is that on their return home, filled with enthusiasm, they meet with apathy, or even with opposition, and fail to carry out what they thought they could accomplish. Perhaps the teacher is himself to blame for this. He allows the impression to be conveyed to the parent that he is going to teach the child things about farming that the parent does not understand, instead of directing the child to seek from the parent and bring to the lesson the useful and practical aspects of the subject. On the one hand antagonism is aroused; on the other, a feeling of sympathy and understanding might be created.

The apathy and opposition that exist are no doubt due in the main to a failure to understand the movement and to appreciate its significance. Where opposition exists, it is based seemingly on the assumption

that agriculture is farming, and that farming consists of the proper performance of certain manual operations which the farmer is better qualified to teach his son than the schoolmaster.

Ask parents whether they desire their children to leave the farm, and their reply, generally speaking, will be decidedly in the negative. They have watched with much heart-burning their sons and daughters being drawn to city pursuits, but they have not been brought to realize that in agricultural teaching they have a means under their control that might if properly employed accomplish much to influence their children's inclinations in the other direction.

If the people on the farms can be brought to realize what agricultural teaching stands for, they will demand it. They will require that the child be inclined towards the land by being taught through the things with which he comes daily into practical contact.

THE DESIRED CITIZEN

Let it be understood that the object of this movement is not to teach farming, but to teach for farming and for life on the farm. That it is intended to develop the child's observing, reasoning and enjoying powers through the vital things that touch his daily life, such as plants, soils and animals; to arouse his interest in them rather than in things that relate

to callings other than farming; to train his intelligence through them for the business of farming rather than through subjects that have no relation to it. If the child's interests can be centred in farm life, and if he can be taught to apply his developing powers thereto, it will do more than all else to hold him on the land.

Half the rural schools of Ontario are this year taking part in the school fair movement. Forty-five thousand country boys and girls are more or less interested in thousands of home plots or in raising poultry from the settings of eggs supplied. The children are displaying pride and enthusiasm in the work. Their plots in many cases give a striking example of what good seed and good cultivation will accomplish. While it is perhaps true that the hope of reward is the underlying motive and the one that makes the readiest and strongest appeal, nevertheless the movement presents an opportunity for the teaching of agriculture that has not been fully appreciated. The children's interest has been aroused, the material is there, and they are in the right mood to be instructed. Proper direction is all that is required to make the movement one of much greater value than it will be otherwise.

It is largely this hope of financial reward that has led so many country-bred young people to turn their faces to the city, and has obscured their vision to the fact that the things that count for real happiness are to be had more readily in the country.

WHAT FARMING STANDS FOR

If we are to regard the farm merely as a factory for the manufacture of food, then let us do away with individual ownership, and organise farming as a great industrial enterprise for producing cheap and abundant food, leaving those who till the soil to fall into a condition of serfdom. We believe that the farm and the farm home stands for something far more important than this in the life

of the nation. It stands for the true welfare of the people. It is the real basis for happy, useful and vigorous manhood and womanhood; it is the true home of liberty and equality; it is, in short, the only real basis of a stable civilization; the race that is rooted to the soil shall endure.

Every boy and girl that is retained to the farm is a real gain to the race. Every new-comer who is induced to go on the land, and there to found a home, is of far greater value than one who becomes a mere cog in the industrial machinery of a city.

Is it the purpose to develop in this country a race possessing the qualities that rural life alone can confer, or are these finer things to be sacrificed to the acquirement of wealth? Is the welfare of the race to be paramount, or are we more concerned in building vast fortunes, or in helping others to build them?

If the movement from the land is governed by financial considerations chiefly, then the application of trained intelligence to the business of farming will make it easier to secure a competence from the soil. The first step in that direction is to adopt a system of teaching that will direct the child's attention to and interest him in the things of the country.

To-day, men's minds are being stirred as never before; new aspects and new purposes in life are being discerned. They are beginning to realize, perhaps, that there are things better worth living for and striving for than money and the luxuries and diversions that money secures. The opportunity calls loudly to the teacher, and to all who aspire to rural leadership, to make clear the realities of life—to show that the greatest good will not be found in acquiring wealth, but rather, for country people, in the sane and wholesome activities of country life. Let them make clear what agricultural teaching signifies in the welfare and happiness of the community, and help secure for the movement the wholehearted support of the people.

CONSOLIDATION OF RURAL SCHOOLS

THE MOVEMENT IN QUEBEC

BY J. C. SUTHERLAND, B.A.

THE school year which closed in June was the first under the new system of special grants from the Government of the Province to aid consolidation of rural Protestant schools. In making these grants, the Government recognized the fact that the Protestant schools are more particularly in need of this plan of concentration. The response of the school boards has not, however, been very marked. There is still a good deal of hesitation about accepting a new system. Part of the aid for the year was given to boards which had already adopted the principle of conveyance. Practically there was only one case of new "complete" consolidation—the word "complete" being used to denote the union of several elementary schools into a model school. In Quebec, of course, the model school corresponds to an advanced public school, doing part of high school work, and therefore well equipped to do good work in agriculture. A considerable amount of ordinary ("partial") consolidation, where the school is not raised to higher rank, is constantly reported by the inspectors. This, in general, is due to economic necessity, and special aid is not asked for as the saving in salaries pays for the conveyance of the few pupils requiring it.

The sentence above with regard to the "response of the school boards" needs some modification. A number of them are anxious and willing to adopt the system, and recognise that there is no alternative in many municipalities, but their hands are tied too often by the opposition of the districts. The attachment to a wretched school-

house, attended frequently by only half a dozen pupils, is inexplicable on reasonable grounds when conveyance to a good, well-equipped and well taught school is possible, but it is a condition which progressive boards have to meet constantly, and which they find difficult to overcome. Constant public education on the question is still required. The strongest incentive to consolidation should be the realization of the fact that it affords the opportunity of giving a better and broader education than the one-roomed school possibly can give, but too often, apparently, this higher ideal is not grasped.

In the July, 1914, number of THE AGRICULTURAL GAZETTE I pointed out one advantage that Quebec possesses in the matter of bringing about consolidation, namely, that the school municipality in this Province is a large unit, usually embracing a whole township, with anywhere from two to twenty or more schools under the one board. This advantage may sometimes work disadvantageously, however, as the following illustration will show. Two years ago partial consolidation was adopted in a certain municipality in the Eastern Townships. Two schools were closed, and the pupils conveyed to a third in a village centre. Apparently the experiment was most successful. The inspector was able to report that the average attendance from the two closed districts was greatly improved. The pupils enjoyed the ride to school, and went far more regularly than when the schools were at their own doors. But at the end of the second year (last June), opposition to the plan arose. The chief ground of the

opposition was that "it was costing more" than under the old system, and the ratepayers had the "proofs" in their school tax bills. As a matter of fact the plan had not cost anything more than the old system. The saving in two salaries had paid for the conveyance. But the school board had increased the tax rate from 35 cents to 50 cents on the hundred dollars, not on account of the consolidation, but to meet increased expenditure, in teachers' salaries, etc., all over the municipality.

At the time of writing (July) several new complete consolidations are expected to be in operation in September. One of these will receive

special aid from the Hon. Sydney Fisher, who is anxious that the experiment may begin with the adoption of nature study teaching and elementary agriculture by a trained teacher of those subjects. The Hon. Mr. Fisher is the chairman of a sub-committee of the Protestant Committee dealing with the question of extending the work on these lines in the rural schools.

The Department continues steadily to encourage the consolidation movement, and if nothing spectacular can be announced at the present time in this direction, there is, at least, the promise of steadily awakening interest in the subject.

LITTLE PROGRESS IN ONTARIO

IN respect to consolidation of rural schools, this movement has made, as yet, little progress in Ontario. There are only two consolidated schools in the province, that at Guelph established originally through the generosity of Sir William Macdonald, and not in itself, from the economical standpoint, a good illustration of how school sections may

be combined to advantage, and the other at Hudson in New Ontario, where one school is made to serve a large area. The latter is not sufficiently well established to serve for purposes of illustration and comparison. The school laws contain provisions by which rural school boards may combine. But thus far, no progress of moment has been made.

THE NEW AGRICULTURAL SCHOOL AT SUSSEX, N.B.

THE new agricultural school at Sussex, N.B., was formally opened and dedicated on the 15th of July. The Hon. J. A. Murray, Minister of Agriculture, presided, and had on the platform with him, His Honor Lieutenant Governor Wood, Premier Hon. Geo. J. Clark, Provincial Secretary-Treasurer, Hon. Dr. D. V. Landry, Attorney General, Hon. J. B. M. Baxter, the Mayor of Sussex and other officials, educational and agricultural.

One hundred and fifty school teachers and school inspectors were in the audience, they having come primarily to spend four weeks at the summer school of science, which opened in the new building on July 14th.

The Provincial Minister of Agriculture, in opening the proceedings, gave credit to the Dominion Government for the opportunity it afforded the province to construct and equip an agricultural school such as that which was now to be formally opened.

The new building includes in the basement a stock-judging pavilion, boiler room and lavatory. On the first floor there are offices and an assembly room, and on the second floor a chemical laboratory, biological laboratory and school room for chemicals, etc. (Plans of the different floors were published in THE AGRICULTURAL GAZETTE for September, 1914, on pages 710 and 711.)

His Honor, the Lieutenant-Gov-

ernor, in declaring the building opened for the purposes intended, said that an agricultural education will not teach a man how to farm without work. It would teach him how to make the best use of his industry and energy. He congratulated the province upon having so useful a building dedicated to its purpose.

After Attorney General Baxter had paid a fitting tribute to the loyal class of farmers who first settled in the county of Kings, Prof. M. Cumming, Secretary for Agriculture,



NEW AGRICULTURAL SCHOOL, SUSSEX, N.B.

vinced upon the dedication of such a building, expressed the hope that they would soon see a similar school erected on the north shore. The farmer needs to have just as good an education for his calling as lawyers and doctors have for theirs.

After Attorney General Baxter had paid a fitting tribute to the loyal class of farmers who first settled in the county of Kings, Prof. M. Cum-

ming, Secretary for Agriculture,

lated the province and the town of Sussex on the completion in the chain of agricultural schools which had been planned for New Brunswick. Having referred to the "patriotism and production campaign," he said that the co-operation of every Canadian farmer would probably be needed to produce food before the termination of the war.

Truro, N.S., conveyed the greetings of the farmers of the province of Nova Scotia to those of the sister province of New Brunswick. Ten years ago he stood in practically the same position in relation to the Nova Scotia agricultural college as now does Prof. Newton to the Sussex agricultural school. In Nova Scotia they were then on the threshold of a forward movement in agricultural education. Their college had been built and the chief criticism was:

would repeat itself in this respect in regard to the new agricultural school in Sussex. He also urged the teachers present to do their utmost for the advancement of agricultural education. If citizens followed the right kind of thought in regard to the agricultural schools of the province, the institution would not fail to accomplish the purposes for which it had been erected.

Prof. Pettitt, of the Ontario agricultural college, extended the greet-



RURAL SCIENCE CLASS IN BIOLOGICAL LABORATORY, NEW AGRICULTURAL SCHOOL, SUSSEX, N.B.

"It is too large. It can never be filled to its capacity." This prediction did not hold true. In the course of a few years, the attendance and requirements for extension justified the building of an additional section to the college building. Since then, one building after another has been erected, until at the present time there are several buildings used for instruction purposes, any one of which is as capacious as the building first erected. Prof. Cumming trusted that history

ings of the farmers of his province and their college staff. He spoke of the spirit of co-operation that the farmers of Ontario displayed towards their District Representatives. He described the work as carried on in the Ontario Agricultural college at Guelph, and trusted the new school would have equal success.

Other speeches were delivered by educational officials, all of whom laid stress upon the value of practical teaching.

MANITOBA

SHORT COURSE FOR CLERGYMEN

THE short course and conference in agriculture and rural sociology held at the Manitoba Agricultural College was highly successful, and marks an advance in rural progress. There were probably one hundred and twenty ministers present—representing five different denominations; of the one hundred and seven who registered 43 were Presbyterian, 33 Methodist, 13 Catholic, 9 Anglican, and 9 Baptist.

until a request should come from the clergymen themselves. This difficulty was overcome when last autumn the Presbyterian Synod of Manitoba appointed a committee to confer with President Black and any committees from other denominations, to consider holding a rural conference on rural problems during the summer.

The response of the various denominations was hearty, and with their co-operation the present course



COUNTRY CLERGYMEN ATTENDING SHORT COURSE, MANITOBA AGRICULTURAL COLLEGE, AUGUST 2 TO 6, 1915

Almost every agricultural section of the province was represented, as well as some parts of Eastern Saskatchewan and New Ontario.

For more than a year President Black had been considering the holding of such a course, but did not think it expedient to undertake it

was planned and carried out.

The aim of the course throughout was to provide a better understanding of the problems affecting the progress of agriculture and to create greater interest in the improvement of conditions affecting country life. About half the programme was given

over to agricultural subjects, such as:—

The Relation of Dairying to Permanent Agriculture.

The Inter-relation of Plants (illustrated).

Selection of Road Horses.

Poultry Raising for Profit.

Field Problems of the Farm.

Live Stock Raising in Relation to Rural Prosperity.

Laws Governing the Plant Kingdom.

Controlling Destructive Insects.

Examination of College Demonstration Plots.

College Extension Service and Country Life.

Bacteriology of Milk.

Some Principles Underlying Successful Dairying.

The Functions of the Air and Soil in Plant and Animal Production.

Good Roads and Community Progress.

Demonstration on Soil Management.

Protection of Farm Buildings from Lightning.

NEIGHBOURHOOD PROBLEMS

The remainder of the time was devoted to the consideration of the problems of the rural neighbourhood, the country school and the country church, and included the following subjects:—

Beautifying Home and Church Grounds.

Relation of Bacteria to the Health of the Country Home.

Modern Conveniences for the Country Home.

Rural Co-operation.

Rural Survey—What it is and why conduct it.

Community Service.

Rural Communities' Contribution to National Life.

The Rural Problem, its Development and Urgency.

Country Life and National Problems.

Overcoming Rural Isolations.

The Rural Social Institutions.

The Teacher and the Community.

Educational Problems of Rural Communities.

Education for Rural Need or Rural Adjustment.

Clergymen's Problems in the Country Districts.

The Church Brotherhood.

The Church the Crown of Country Life.

The Ideal Church.

The agricultural subjects were dealt with by members of the college staff. The outside speakers included:

Dr. J. W. Robertson, chairman, technical education and industrial training commission, Canada; Rev. Canon Jeffrey, secretary of the diocese of Rupert's Land; Rev. Dr. J. G. Shearer, superintendent of the department of social service and evangelism of the Presbyterian church in Canada; Rev. Dr. T. Albert Moore, secretary department of social service and evangelism of the Methodist church in Canada; Rev. Dr. H. P. Whidden, principal Brandon College; Professor J. H. Gillette, head of the department of sociology, University of North Dakota (author of "Constructive Rural Sociology"); Rev. J. S. Woodsworth, secretary Canadian Welfare League; Rev. W. A. Riddell, director of rural surveys in the Swan River and Turtle Mountain districts of Manitoba; Rev. George A. Dorey, of Abernethy, Sask.; Mr. R. C. Henders, president Manitoba Grain Growers' Association; Mr. C. K. Newcombe, superintendent of education for Manitoba; Mr. A. McGillivray, provincial highway commissioner, Manitoba.

OF HISTORICAL SIGNIFICANCE

To even the casual observer it was apparent at the various meetings that more than ordinary interest and appreciation was shown by the ministers in attendance. The course was a new thing. Some may have been a little sceptical before coming, but the first session was sufficient to make it clear that they were attending no ordinary meeting of their brethren but a gathering of historic significance pregnant with possibility for the upbuilding of a healthy satisfying community life in the country.

Most of the outstanding religious leaders of rural Manitoba were present—practical men who are facing present-day problems in the country.

These men realizing the significance of the whole movement soon became enthusiastic. Intense appreciation was shown of the more technical lectures given by members of

the college staff. Such remarks were common:—"The college professors certainly know how to make their lectures interesting," "I have just enjoyed it," "The finest holiday I have ever had in my life," "Mistake I missed the first day," "It is much better than a meeting of Synod," "Finest opportunity for us to get together and remove our prejudices," "Best thing I have attended, it brings the ministers of the different denominations together on a common platform of community uplift."

Spiritual values were not sacrificed. Indeed the atmosphere of the whole course was deeply religious. As one minister expressed it: "It has been a week of deep religious feeling and great spiritual value; the year will be greater because of the influence here."

APPRECIATIVE RESOLUTION

After the following resolution had been read, President and Mrs. Black were presented with a silver service as a small token of appreciation:

"We who are attending the Short Course and Conference on Agriculture and Rural Sociology, planned for clergymen identified with rural service, wish to express our sense of the great debt we owe to President Black for providing this opportunity of considering, under expert guidance, the many important problems relating to rural life in which the college and the men of the church are mutually interested.

"Not only do we appreciate the gracious and generous provision for our comfort as guests of the College and the Department of Agriculture, but we recognize also the wide horizons of the President and his staff in the range and importance of the subjects discussed during the sessions of the Course, and we have been brought to admire the technical skill and human interest manifested by President Black and his staff of

professors in the presentation of the various subjects touching the life and work of the people in rural communities. We also value the service rendered us in bringing to the Conference Dr. J. W. Robertson, distinguished in educational service, and the other able speakers who have dealt with matters in which they have special knowledge.

"We desire to thank the railways for their courtesy in granting special rates to the ministers attending the sessions.

"We note with great satisfaction the announcement of the President that he is prepared to arrange for a similar course next year, and to welcome the wives of the men attending, with arrangement of such topics as relate to this life and service. We earnestly hope that this will be effected.

"If found feasible, we should be glad if the report of the lectures and addresses delivered at the Conference might be printed and thus placed at the disposal of other clergymen who have not been able to attend.

"We appreciate this opportunity of knowing at first hand the splendid work that is being done in agricultural education in our province and the fine equipment of plant, but still more to be assured of the high ideals of the faculty, and the potent influence that must make for worthy character and effective life service in the young men and women who have the privilege of studying here."

The present short course is the first of its kind held in Canada, prepared exclusively for clergymen. It has been successful, not only in giving an enlarged conception of the ideal country community, but in showing other social forces and agencies which may be drawn upon and used for community betterment. This getting of the ministers of the various denominations to look at life together, and to community life as a whole, shows new possibilities of the leadership of the church and means much for rural progress.

The fifty-second annual meeting of the Entomological Society of Ontario will be held in Ottawa on November 4th and 5th, 1915. Dr. L. O. Howard, Chief of the Bureau of Entomology, United States Department of Agriculture, has consented to give the annual public lecture on Thursday, November 4th. Mr. Arthur Gibson, Entomological Branch, Department of Agriculture, Ottawa, is acting as local secretary for the meeting.

PART IV

Special Contributions, Reports of Agricultural Organizations, Notes and Publications

SECOND HONOUR ROLL, DOMINION DEPARTMENT OF AGRICULTURE

LIVE STOCK BRANCH

H. V. BENT, Assistant in the Sheep & Goat Division, went as private in the 2nd University Company with the Princess Patricia's.

SEED BRANCH

H. L. KEEGAN, B.S.A., District Officer, provinces of Alberta and British Columbia.

ALFRED EASTHAM, B.S.A., Chief seed analyst.

ENTOMOLOGICAL BRANCH

H. F. HUDSON, B.S.A.

H. S. BRODIE.

EXPERIMENTAL FARM

VICTOR ARMSTRONG.

E. N. SANSOM.

J. CURZON.

S. STANDING.

E. MASON.

HEALTH OF ANIMALS BRANCH

CONTAGIOUS DISEASES DIVISION

D. S. TAMBLYN, D.V.S.

B. R. POOLE, V.S.

G. COUSINS.

S. METZE.

H. C. EVANS.

G. H. UNWIN.

GEO. S. THORNEWILL, V.S.

J. T. M. HUGHES, M.R.C.V.S.

R. W. MACDONALD, V.S.

J. J. FARRELL, V.S.

A. E. CAMERON, V.S.

C. MACONACHIE, V.S.

A. WATSON, V.S.

MEAT INSPECTION DIVISION

O. BRUNET, M.V.

SCHOOL CONSOLIDATION IN THE SOUTH

The following reasons for the consolidation of schools were given by N. R. Baker at the annual meeting of the Southern Educational Association:

1. The schools can be graded better because there are not so many grades to each teacher.

2. Better teachers can be secured for well-graded schools, because the teacher feels that she can do better work in a few grades than in many.

3. It makes it possible to support high-school grades and thus serve the secondary educational interests of the community, resulting in keeping pupils in school longer and in keeping them under the home roof.

4. It makes it possible to teach such cultural subjects as music and drawing.

5. It makes it possible to teach vocational subjects, such as cooking, sewing, agriculture and bench woodwork.

6. It makes it possible to devote more time to reading, language, spelling and writing, the just now neglected subjects.

7. It results in longer terms and more regular attendance.

8. It enlarges the community, gives wider social contact, and broadens the horizon of every individual.

9. It fosters lyceums, literary societies, debating societies, reading circles, libraries, athletic sports, agricultural clubs and other vitalizing agencies.

10. It results in better equipment for the building and grounds, greater safety and better health for the pupils, and greater real economy for the patrons.

11. It makes the country school equally attractive with the town school.

12. It becomes a social and civic centre.

13. It is not so easily susceptible to the fluctuations of population.

14. It encourages good roads.

15. It is more easily supervised by officials and yields more readily to effective supervision.

HACKNEY REGISTRATION RULES

AT a general meeting of the Canadian Hackney Horse Society held in Toronto on August 2nd, Section 1, Article 14, of the Rules of Entry were amended to read as follows:

The pedigrees of the following animals may be admitted to registry.

- (1) Bred in Great Britain or Ireland.
 - (a) A stallion or mare recorded in the English Hackney Stud Book.
- (2) Bred in Canada.
 - (a) A stallion or mare by a sire and out of a dam recorded in the Canadian Hackney Stud Book, with the exception of the produce of mares recorded in the Canadian Hackney Stud Book as founda-

tion stock or the stallion produce of mares recorded in the Canadian Hackney Stud Book as half registered.

- (b) A mare by a sire recorded in the Canadian Hackney Stud Book provided her dam is by sire recorded in the Canadian Hackney Stud Book.
- (c) A mare by a sire recorded in the Canadian Hackney Stud Book provided her dam is a Thoroughbred mare recorded in the Canadian Thoroughbred Stud Book.
- (d) The stallion produce of mares recorded under Clause C. are not eligible for registration.

REGISTRATIONS TO AUGUST, 1915

THE number of pedigrees of cattle and horses registered with the Canadian National Live Stock Records from the inception of the system to August this year were:

CATTLE

Shorthorn.....	215,715
Ayrshire.....	54,178
Hereford.....	18,480
Jersey.....	6,051
Galloway.....	2,150
Aberdeen Angus.....	9,526
Guernsey.....	966
French Canadian.....	3,601
Red Polled.....	2,188

HORSES

Clydesdale.....	52,681
Shire.....	2,272
Hackney.....	1,887
French Canadian.....	1,581
Percheron.....	9,383
Belgian.....	839
Standard Bred.....	1,861
Thoroughbred.....	1,824
Pony.....	991
Suffolk Punch.....	347
French Coach.....	104

The total number of swine recorded up to August this year was 134,569 and of sheep 131,564.

DOG RECORDS NATIONALIZED

A circular has been issued from the office of the National Live Stock Records stating that the Canadian Kennel Club has been incorporated under the Live Stock Pedigree Act, and that now pedigrees of dogs will be recorded and kept under the same system as all forms of live stock. Members are accordingly notified that henceforth they must send their pedigrees for registration to the Accountant of the Canadian National Live Stock Records, Ottawa, who will furnish all the information required.

Dogs from the United States or Great Britain must be registered with the American Kennel Club or the English Kennel Club before they can be recorded in the Canadian Kennel Club stud book.

Foreign certificates of registration should be forwarded to the office of the Accountant, Ottawa, and import certificates secured thereon presented to the Customs officer where application for free entry is made.

Animals exported to the United States will enter that country free on export certificate issued from the office of the Canadian National Live Stock Records after dogs are recorded in the Canadian Kennel Club Stud Book in the name of the American purchaser.

The membership fee to the end of December, 1916, from September 1st, this year is four dollars, a change having been made in the fiscal year to meet the requirements of the Records board.

FREE ENTRY OF DOGS TO UNITED STATES

A bulletin issued by the Bureau of Animal Industry at Washington, D.C., gives the following as the conditions under which dogs can be admitted to the United States free of duty:

First, the dog must be registered in a recognized foreign club, and the pedigree of the dog obtained.

Second, the pedigree of the dog must then be stamped—that is, certified to—by the secretary of the above mentioned club, and certificate of registration of this dog in the club must also be obtained from the secretary of the club.

Third, a vendor's certificate must also be

obtained from the seller of the dog or his agents, which shall give the name and registration number of each dog sold to the importer, the date of sale, place of purchase, and the name and address in the States of the purchaser. Blanks for this certificate may be obtained from the custodian of The Foreign Book of Record in Washington, or a suitable form can generally be obtained from one of the American Express companies doing business in Europe.

Fourth, a bill of sale, showing price paid for the dog, must also be obtained from the seller.

THE VOICE OF THE OPTIMIST

THOUGH Maine's hay has been washed away or rotted where cocked, her grain lodged, her apples beaten from the boughs, her vegetables rotting in the ground, her potatoes running to tops, her corn destined for the silo, her blueberries under water and her sardines uncontracted for, yet she is not discouraged, and rejoices in the news sent out by the federal crop reporters, that "three billion bushels of corn, one and a half billion bushels of oats and a billion bushels of wheat are in prospect for this year's American harvest." That "record crops of rye, white and sweet potatoes, tobacco, rice and hay also are predicted for the prosperous farmers, who have planted 310,546,000 acres, 10,000,000 acres more than last year to their principal products."

That "the wheat crop, the greatest ever grown in any country, will be worth more than \$1,000,000,000, while corn crop value may reach \$2,500,000,000." That "estimates of the principal crops, announced today by the Department of Agriculture, based on conditions of August 1, show that all crops will be greater than last year. Wheat and corn showed improvement over July conditions, though excessive rains and cold weather in the central states interfered with threshing." That "corn prospects increased almost 100,000,000 bushels." That "white potatoes promise to exceed their former record production by 103,000,000 bushels, and sweet potatoes by 4,000,000 bushels."—*The Maine Farmer*.

EXTENSION WORK IN THE UNITED STATES

AT the twenty-eighth convention of the American Agricultural Colleges and Experimental Stations held at Washington, D.C., a full report of which has recently been issued in book form, a deal of valuable information was given regarding the work accomplished under the Smith-Lever Bill which, in the United States, corresponds in large measure to THE AGRICULTURAL INSTRUCTION ACT in Canada. Primarily it was shown that by its aid the extension work of the various agricultural colleges had been greatly developed. Mr. A. C. True, Chairman of the States' Relations Committee and Dean of the Missouri College of Agriculture in the first instance, explained the operation of the Act. He said, that it provided prac-

tically in the colleges a division of service for extension work corresponding to the service for research which is called an Experiment Station. The Department in its turn undertakes to bring all its extension work under the administrative direction of a single organization, and for that purpose has created the States' Relations Committee. The work of the different Bureaus of the Agricultural Department, which involves extension, has to be considered and passed upon by the States' Relations Committee before any arrangements are definitely made with any State College; and when these arrangements are to be made, it is understood that the initial steps shall be taken through the Committee and the Director, or other

duly accredited officer, in charge of the extension service of the College. At present forty-five of the colleges have entered into this broad co-operative arrangement.

EFFICIENCY PROMOTED

Mr. A. M. Soule, President of the Georgia State College of Agriculture and Director of the Extension Department, delivered a comprehensive address in which he went over the entire work under the Smith-Lever Act, the progress that had been made and the results that had been so far reached. He explained that the Smith-Lever Extension Act provided liberal maintenance for extension work, but the availability of these funds is predicated on the state's duplicating the same. If the state does not readily meet the federal appropriations, funds can be secured from the county through the commissioners or county Board of Education. Funds can also be obtained through boards of trade, chambers of commerce, farmers' organizations, corporations and individuals. Fifty thousand dollars has been contributed in Georgia for several years past by various local agencies for the maintenance of the field work of the extension division. This gives some idea of the response the people are ready to make.

Mr. Soule stated that there was now quite a large and efficient extension staff organized. Sixty-four supervising and county agents are employed in the State of Georgia, and forty-two canning club agents. The state has thirty-five specialists in various lines. Demonstrations were successfully carried on last year on 5,000 farms. There are 10,000 members of the boys' corn clubs, 3,500 members of the canning clubs, and 1,000 members of the pig clubs. The result of the effective work is seen in a wonderful increase of corn growing, which amounts on a monetary basis alone to \$30,000,000 annually. As evidence of the way the work was appreciated by the lads themselves, Mr. Soule quoted a case of one of the members of the boys' poultry clubs, saying in his report, "I made \$21.25 off my chickens last year, but I obtained \$500 worth of information and experience and had a \$1,000 worth of pleasure." Turning energy into profitable channels, teaching fundamental knowledge and changing work into play, means a development of head, hand and heart and soul of which there is reason to be proud.

GENERAL IMPROVEMENT

Extension work, Mr. Soule continued, properly organized, will tend to right conditions on the farm and in the home, and will bring inspiration and encouragement where dejection, and sometimes despair and failure, have been enthroned

too long. It will give constructive purpose to the minds of many people. It will result in the development of a more permanent type of agriculture through making available to the farm and the farm home the wonderful stores of knowledge which scientific research has created, but which have so long remained in cold storage for want of some efficient method of distribution. While great economic changes will result from the establishment of this work, it is clear, as the reports of adult farmers and boys and girls amply demonstrate, that it builds up the body and mind, gives definiteness of purpose to life and brings into the consciousness of all a recognition of the new power which they may possess and enjoy through the exercise of more intelligent methods of practice. Best of all, it builds healthy bodies and strong, purposeful souls with a broad vision and belief in their own powers of accomplishment which was not always resident there. It demonstrates, as it was intended, that farm work may be easily transformed from the realm of an unwelcome task to the pleasurable fields of profit, valuable experience and enjoyable recreation.

TEACHERS' QUALIFICATIONS

Mr. J. M. Hamilton, President of the Montana State College of Agriculture, referred to the qualifications required of teachers of agriculture. He said that it required something more than an agricultural training to make a good teacher of agriculture. In the first place, the candidate for the position of agricultural teacher should have been reared in the country—preferably on a well-conducted farm. This alone can give him the right point of view and the sympathetic attitude toward the farmer and the farm home. Such a person will know rural problems at first hand. No amount of veneer put on in the city can take the place of country life experience. In no other way can the teacher understand the farmer's point of view and his attitude of mind toward manufacturers, great transportation companies and the Government. Of course a teacher of agriculture must have a thorough knowledge of agricultural science and the best agricultural practice. This must be acquired in an agricultural college, but he must also know how to impart such knowledge according to the most approved and efficient methods of pedagogy. He must understand psychology and the principles of teaching. One of the great tasks that the agricultural college has to assume is that of providing efficient agricultural teachers.

CONSOLIDATED SCHOOLS

Mr. G. E. Vincent, President of the Minnesota State College of Agriculture,

referred to the organization of the consolidated schools. He said, that they must have teachers' houses in their immediate proximity. He thought that the point should soon be arrived at when no consolidated rural school would be built without a house being provided for the janitor and his wife, the latter of whom must be a good cook. Here it would be possible for the teachers to have heat and light, for most of these consolidated rural schools must have heating and lighting plants. Here the teachers could live in small congenial groups under comfortable conditions. Here again teachers of House-

hold Economics and Agriculture and Manual Training who come from the college of agriculture would be able to adapt themselves to the help of those who are actually giving the normal instruction. In his state approximately 2,000 rural teachers were brought by the summer schools into contact with people who represent the higher ideas and ideals.

Many other prominent men present at the Convention testified to the splendid work that the Smith-Lever Bill, like THE AGRICULTURAL INSTRUCTION ACT of Canada, had made possible.

AGRICULTURAL WORK FOR WOMEN

THE Labour Exchange Department of the Board of Trade of Great Britain have issued the following notes on agricultural work and training for women:

Women are needed for agricultural work, especially in the following branches:—

- (1) Milking and dairy work.
- (2) Care of cattle, pigs and poultry.
- (3) Field and market garden work, e.g., potato planting, weeding, thinning, hop-tying.

For milking and dairy work a course of training is necessary if the worker is to be in a position to command nearly full wages from the commencement. In the other branches useful work of some value from the wage-earning point of view can be rendered from the beginning, and experience may be rapidly acquired as a result of working under supervision for a short time.

There are a few agricultural colleges and limited number of private farms where a short course of training can be obtained on payment of a fee. The cost is usually about £1 per week for instruction, board and lodging.

In many counties there are travelling dairy schools which provide short courses of instruction, usually extending over about ten days, while a few county education authorities are now arranging special short courses of training with a view to preparing women for light farm work. Information in regard to these schools and courses can be obtained from the county education secretaries.

The Board of Agriculture and Fisheries have arranged for a strictly limited number of courses of training extending over two to four weeks, to be given at certain agricultural colleges. In these courses maintenance is provided and no cost is involved for the women under training.

The Board of Agriculture and Fisheries have stated that 12s. to 15s. a week may be considered an average wage for women in agricultural work under present conditions.

Applicants for agricultural work are reminded that the hours are necessarily long, and certain parts of the work must be done in the early hours of the morning, and on Sundays.

A strong physique is considered essential.

The apple-picking law recently passed by the New York state legislature requires that all barrels of apples be properly marked as to the quality of the contents before they can be sold in storage.

LIST OF SUGGESTED BOOKS FOR FARMERS' LIBRARIES RECOMMENDED BY THE AGRICULTURAL COLLEGES OF CANADA

ANIMAL HUSBANDRY

- "Farm Live Stock of Great Britain." By Wallace. Published by Oliver & Boyd, London. \$2.00.
- "Types and Breeds of Farm Animals." By Plumb. Published by Ginn & Co., New York.
- "Principles of Breeding." By Davenport. Published by Ginn & Co., New York.
- *"Breeding Farm Animals." By Marshall. Published by Sanders Publishing Co., Chicago. \$2.50.
- "Cattle Breeding." By Warfield. Published by Sanders Publishing Co., Chicago.
- "Animal Breeding." By Shaw. Published by Orange Judd Co., New York.
- "Stock Breeding." By Miles. Published by Appleton & Co., New York.
- "Principles of Stock Breeding." By Wilson. Published by Vinton Co., London.
- "Manual of Farm Animals." By Harper. Published by Macmillan Co., Toronto.
- "Animal Husbandry for Schools." By Harper. Published by Macmillan Co., Toronto.
- *"Judging Live Stock." By Craig. Published by Kenyon Printing Co., Des Moines, Iowa. \$1.25.
- "Feeds and Feeding." By Henry. Published by Author, Madison, Wis. \$1.90.
- "Profitable Stock Feeding." By Smith. Published by Author, Lincoln, Neb.
- "Diseases of Cattle." Published by United States Department of Agriculture.
- "Diseases of Horses." Published by United States Department of Agriculture.
- "Diseases of Swine." By Craig. Published by Orange Judd Co., New York.
- *"The Farmer's Veterinarian." By Burkett. Published by Orange Judd Co., New York.
- "The Practical Stock Doctor." By Waterman. Published by Dickerson & Co., Detroit.
- "Sheep Farming in America." By Wing. Published by Sanders Publishing Co., Chicago.
- "Modern Sheep Breeds and Management." By "Shepherd Boy." Published by American Sheep Breeder Co., Chicago.
- *"Sheep Farming." By Craig. Published by Macmillan Co., Toronto. \$1.50.
- "Sheep Feeding and Farm Management." By Doame. Published by Ginn & Co., New York.
- "Sheep Management." By Franz Kleinhertz. Published by Franz Kleinhertz, Madison, Wis.
- "Fitting Sheep." By "Shepherd Boy." Published by Draper Publishing & Supply Co.
- "Sheep Breeds and Management." By Wrightson. Published by Vinton & Co., Chicago.
- "Angora Goat Raising & Milch Goats." By Thompson. Published by American Sheep Breeder Co., Chicago.
- *"Productive Swine Husbandry." By Day. Published by Lippincott & Co., Philadelphia. \$1.00.
- "Swine." By Dietrich. Published by Breeders' Gazette, Chicago.
- "Swine Husbandry." By Coburn. Published by Orange Judd Co., New York.
- "The Hog Book." By Dawson. Published by Breeders' Gazette, Chicago.
- "Pigs, Breeds and Management." By Spencer. Published by Vinton & Co., London.
- "The Horse Book." By Johnson. Published by Breeders' Gazette, Chicago.
- "Heavy Horses, Breeds and Management." By various authors. Published by Vinton & Co., London, Eng.
- "Light Horses, Breeds and Management." By various authors. Published by Vinton & Co., London.
- "Points of the Horse." By Hayes. Published by Hurst & Blackwell, London.
- "The Horse." By Roberts. Published by Macmillan Co., Toronto.
- "Studies in Horse Breeding." By Carlson. Published by H. G. Carlson, Norfolk, Neb.
- *"Productive Horse Husbandry." By Gay. Published by Lippincott & Co.
- "History of Shorthorn Cattle." By Sanders. Published by Sanders Publishing Co., Chicago.
- "History of Shorthorn Cattle." By Sinclair. Published by Vinton & Co.
- "History of Aberdeen Cattle." By Sinclair. Published by Vinton & Co.
- "History of Hereford Cattle." By Sinclair. Published by Vinton & Co.
- *"Beef Production." By Mumford. Published by H. W. Mumford, Urbana, Ill. \$1.25.
- "The Horse." By Gay. \$1.50.

*For the practical man or average farmer.

FIELD HUSBANDRY

- *"Cereals in America." By Hunt. Published by Orange Judd Co. \$1.75.
- "The Book of Wheat." By Dondlinger. Published by Orange Judd Co.
- "The Book of Corn." By Myrick. Published by Orange Judd Co.
- "Wheat Growing in Canada, The United States and Argentina." By Rutter. Published by A. & C. Black, London. \$1.50.
- "The Book of Alfalfa." By Coburn. Published by Orange Judd Co.
- "Alfalfa." By Coburn. Published by Orange Judd Co.
- "Alfalfa in America." By Wing. Published by Sanders Publishing Co., Chicago.
- "Forage Crops." By Voorhees. Published by Macmillan Co., Toronto.
- "Forage & Fibre Crops in America." By Hunt. Published by Orange Judd Co. \$1.75.
- "Forage Plants." By C. V. Piper. Published by Macmillan Co., Toronto.
- "Soiling Crops and the Silo." By Shaw. Published by Orange Judd Co. \$1.50.
- "Grasses." By Shaw. Published by Orange Judd Co.
- "Clovers." By Shaw. Published by Orange Judd Co. \$1.15.
- "Forage Crops." By Shaw. Published by Orange Judd Co.
- "The Potato." By Fraser. Published by Orange Judd Co.
- "Cyclopedia of American Agriculture." Four volumes. By L. H. Bailey. Published by Macmillan Co., New York. \$20.00.
- "Meadows and Pastures." By Wing. Published by Breeders' Gazette, Chicago.
- "Soil Fertility & Permanent Agriculture." By Hopkins. Published by Ginn & Co., New York. \$2.25.
- ***"Soils." By Fletcher. Published by Doubleday, Page & Co., New York. \$1.85.
- "Dry Farming." By Macdonald. Published by Century Co., New York.
- "Dry Farming." By Widstoe. Published by Macmillan Co., New York. \$1.50.
- "Dry Land Farming." By Thomas Shaw. Published by The Pioneer Co., St. Paul, Minn.
- "Soil Culture Manual." By Campbell. Published by the Author, Lincoln, Neb.
- "Farm Manures." By Charles E. Thorn. Published by Orange Judd Co., New York. \$1.50.
- "Farm Management." By G. F. Warren. Published by Macmillan Co., Toronto.

- "Farmers for Forty Centuries." By King. Published by Author, Madison, Wis.
- "The Book of the Rothamsted Experiments." By Hall. Published by Dutton & Co., London. \$3.50.
- "Irrigation and Drainage." By King. Published by Macmillan Co.

DAIRYING

- "Canadian Dairying." By Dean. Published by William Briggs, Toronto. \$1.00.
- "Farm Dairying." By Laura Rose. Published by A. C. McClurg Co., Chicago. \$1.35.
- "Dairy Cattle & Milk Production." By Eckles. Published by Macmillan Co., New York. \$1.50.
- "Principles and Practice of Butter Making." By McKay and Larsen. Published by John Wiley & Sons, New York. \$1.50.
- "First Lessons in Dairying." By Van Norman. 50 cents.
- "Questions and Answers in Buttermaking." By Publow. 50 cents.
- "Testing Milk and its Product." By Farrington & Woll. \$1.25.
- ***"Buttermaking on the Farm." By Tisdale & Robinson. Published by John North, 98 Fetter Lane, London. 30 cents.
- ***"Practice of Soft Cheesemaking & Preparation of Cream for Market." By Tisdale & Robinson. Published by John North, 98 Fetter Lane, London. 30 cents.
- ***"Buttermaking on the Farm and at the Creamery." By Tisdale & Robinson. Published by John North, 98 Fetter Lane, London.
- ***"Modern Methods of Testing Milk and Milk Products." By Lucius Van Slyke. Published by Orange Judd Co.
- ***"Bacteria as Friends and Foes of the Dairy Farmer." By W. Sadler. Published by Methuen & Co., London. 50 cents.

POULTRY

- "Poultry Craft." By Robinson. \$1.25.
- "American Standard of Perfection." \$2.00.
- ***"Productive Poultry Husbandry." By H. R. Lewis. Published by Lippincott. \$2.00.
- "Our Domestic Birds." By J. H. Robinson.
- "Principles and Practice of Poultry Culture." By J. H. Robinson. Published by Ginn & Co. \$2.50.
- "Poultry Production." By W. A. Lippincott. Published by Lea & Febiger, Philadelphia. \$2.25.

*For the practical man or average farmer.

HORTICULTURE

- ***"Principles of Fruit Growing." By Bailey. Published by Orange Judd Co. \$1.50.
- "Bush Fruits." By Card. Published by Orange Judd Co. \$1.50.
- "The American Apple Orchard." By Waugh. Published by Orange Judd Co. \$1.00.
- "Plums and Plum Culture." By Waugh. Published by Orange Judd Co. \$1.50.
- "Popular Fruit Growing." By Green. Published by Webb Publishing Co. \$1.50.
- ***"Canadian Apple Growers' Guide." By Wolverton. Published by Canadian Horticulturist Publishing Co., Peterboro. \$2.25.
- ***"The Nursery Book." By Bailey. Published by Orange Judd Co. \$1.50.
- "Propagation of Plants." By Fuller. Published by Orange Judd Co. \$1.50.
- "Garden Farming." (Vegetable). By Corbett. Published by Ginn & Co. \$2.00.
- "Vegetable Gardening." By Watts. Published by Orange Judd Co. \$1.75.
- "Success in Market Gardening." By Rawson. Published by Orange Judd Co. \$1.50.
- "Garden Making." By Bailey. Published by Orange Judd Co. 75 cents.
- "Tomato Culture." By Tracy. Published by Orange Judd Co. 50 cents.
- "Celery Culture." By Beattie. Published by Orange Judd Co. 50 cents.
- "Gardening for Pleasure." By Henderson. Published by Orange Judd Co. \$1.50.
- ***"Practical Floriculture." By Henderson. Published by Orange Judd Co. \$1.50.
- "Greenhouse Construction." By Taft. Published by Orange Judd Co. \$1.50.
- "Greenhouse Management." By Taft. Published by Orange Judd Co. \$1.50.
- "Landscape Gardening as Applied to Home Decoration." By Maynard. Published by Orange Judd Co. \$1.50.
- "Practical Forestry." By Fuller. Published by Orange Judd Co. \$1.50.
- "Fruit Growers' Guide Book." By Favor. \$1.00.
- "Systematic Pomology." By Waugh. \$1.00.
- "Amateur Fruit Growing." By Green. 50 cents.
- "Manual of Gardening." By Bailey. \$2.00.
- "Vegetable Gardening." By Green. \$1.00.
- "Landscape Gardening." By Waugh. \$1.00.
- "Bean Culture." By Sevey. 50 cents.
- "A B C of Potato Culture." By Terry. 50 cents.
- "Asparagus." By Hexamer. 50 cents.
- "Cabbages, Cauliflower and Allied Vegetables." By Allen. 50 cents.
- "Mushrooms and How to Grow Them." By Falconer. \$1.00.
- "New Onion Culture." By Grainer. 50 cents.
- "Practical Forestry." By Fuller. Published by Orange Judd Co. \$1.50.
- "Strawberry Culture." By W. T. Macoun. Bulletin No. 62. Dominion Government Bulletin, Central Experimental Farm, Ottawa.
- "Reports of Dominion Horticulturist for 1913-12-11-10, etc."
- "Strawberry Culture and the Red Raspberry." Bulletin No. 210. Ontario Department of Agriculture.
- "Cabbage and Cauliflower." Bulletin No. 203. Ontario Department of Agriculture.
- "Onions." Bulletin No. 199. Ontario Department of Agriculture.
- "Tomatoes." Bulletin No. 196. Ontario Department of Agriculture.
- "Apple Orchard." Bulletin No. 194. Ontario Department of Agriculture.
- "Reports of the Ontario Fruit Growers' Association."
- "Reports of the Ontario Vegetable Growers' Association."
- "Reports of the Ontario Fruit Branch."
- "Fungous Diseases Affecting Vegetables." Bulletin No. 171. The Ontario Department of Agriculture.
- "Bee-keeping." Bulletin No. 182. Ontario Department of Agriculture.
- "Codling Moth." Bulletin No. 187. Ontario Department of Agriculture.
- "Lime-Sulphur." Bulletin No. 198. Ontario Department of Agriculture.

ELEMENTARY AGRICULTURE

- "Agriculture through the Laboratory and School Garden." By Jackson and Daugherty. Published by Orange Judd Co. \$1.50.
- "Rural School Agriculture." By Davis. Published by Orange Judd Co. \$1.00.
- "Agriculture for Common Schools." By Hastings & Cotton. Published by Chas. Scribner & Sons, New York. \$1.00.
- "One Hundred Lessons in Agriculture." By Nolan. Published by Row Peterson & Co. \$1.00.
- ***"Agriculture for Beginners." By Burkett, Stevens & Hill. Published by Ginn & Co. 75 cents.

*For the practical man or average farmer.

- "Elementary Agriculture & Nature Study." By Brittain. Published by Educational Book Co. 75 cents.
- *"School and Home Gardens." By Meier. Published by Ginn & Co. \$1.00.
- *"Agronomy—Practical Gardening." By Clute. Published by Ginn & Co. \$1.00.
- "The School Garden Book." By Weed and Emerson. Published by Scribner and Sons, New York. \$1.25.
- "Gardens and Their Meaning." By Williams. Published by Ginn & Co. \$1.00.
- *"The American Flower Garden." By Blantham. Published by Doubleday, Page Co. New York \$1.50.
- "Amongst School Gardens." By Greene. \$1.25.
- "Among Country Schools." By Kern. \$1.25.
- "Country School and Country Life." By Carney. \$1.25.

NATURE STUDY

- "The Handbook of Nature Study." By Comstock. Published by the Author. Ithaca, N.Y. \$3.50.
- "Nature Study and Life." By Hodge. Published by Ginn & Co. \$1.50.
- "Nature Study." By Holtz. Published by Chas. Scribner Co. \$1.50.
- "How to Teach the Nature Study Course." By Dearness. Published by Copp, Clark & Co. 50 cents.
- "First Studies in Plant Life." By Atkinson. Published by Ginn & Co. 75 cents.
- "Beginners' Botany." By Bailey. Published by Macmillan Co. 75 cents.
- *"How to Know the Wild Flowers." By Mrs. Dana. Published by Scribner & Sons. \$2.00.
- "How to Know the Ferns." By Parsons. Published by Scribner & Sons. \$1.50.
- "Our Native Trees." By Keeler. Published by Scribner & Sons. \$2.00.
- "Our Northern Shrubs." By Keeler. Published by Scribner & Sons. \$2.00.
- "Squirrels and Other Fur-bearing Animals." By Burroughs. Published by Houghton, Mifflin Co. 60 cents.
- *"Corn Plants." By Sargent. Published by Houghton, Mifflin Co. 75 cents.
- "Trees of New England." By Dame and Brooks. Published by Ginn & Co. \$1.50.
- *"Bird Guide—Land Birds." By Reed. Published by Chas. K. Reed, Worcester, Mass. 75 cents.
- *"Flower Guide." By Reed. Published by Chas. K. Reed, Worcester, Mass. 75 cents.
- "Bird Life." By Chapman. Published by D. Appleton Co. \$2.00.
- "Secrets of the Woods." By W. J. Long. Published by Ginn & Co., Boston. 60 cents.
- "Wood Folk at School." By W. J. Long. Published by Ginn & Co., Boston. 60 cents.
- "Wilderness Ways." By W. J. Long. Published by Ginn & Co., Boston. 60 cents.
- "Ways of Wood Folk." By W. J. Long. Published by Ginn & Co., Boston. 60 cents.
- "Animal Competitors." By Ernest Ingersoll. Published by Sturgis & Walton. New York. \$1.25.
- "Wild Animals I Have Known." By E. Thompson Seton. Published by William Briggs. Toronto. \$2.00.
- "Lives of the Hunted." By E. Thompson Seton. Published by Scribner, New York. \$2.00.
- "First Lessons with Plants." By L. H. Bailey. Published by Macmillan Co., New York. 75 cents.
- "Flashlights on Nature." By Grant Allen. Published by George Newnes. London. 40 cents.
- "Fifty Common Birds of Farm and Orchard" (with coloured illustrations). Farmers Bulletin No. 513. Fifteen cents. To be obtained from the Superintendent of Documents, Washington, D.C.
- "Modern Nature Study." By Silcox and Stevenson. 75 cents.
- "Bird Life." By Reed. 68 cents.

BOTANY

- "Agricultural Botany." By Percival. Published by Holt & Co. \$2.25.
- "Botany." By Bailey. Published by Macmillan Co. \$1.00.
- "Plant Physiology." By Duggar. Published by Macmillan Co. \$1.75.
- "Fungous Diseases of Plants." By Duggar. Published by Ginn & Co. \$1.75.
- "Diseases of Economic Plants." By Stevens & Hall. Published by Macmillan Co. \$1.50.
- *"Fodder and Pasture Crops." By Clarke & Malte, Ottawa. 50 cents.
- "Field, Forest and Garden Botany." By Gray. \$1.80.
- "Botany for Beginners." By Evans. 80 cents.
- "Text Book of Botany." By Strasburger. \$5.00.

BACTERIOLOGY

- *"Bacteria in Country Life." By Lipman. Published by Macmillan Co.
- "Microbe Biology." By Marshall. Published by Blackistons. \$2.50.

*For the practical man or average farmer.

"Dairy Bacteriology." By H. W. Pond.
Published by Ginn & Co. \$1.25.

"Dairy Bacteriology." By Russell. Published by the Author, Madison, Wis.

"Primer of Sanitation." By Ritchie. Published by World Book Co., New York. 50 cents.

"Agricultural Bacteriology." By Conn. Published by Blackiston Sons & Co., 1012 Walnut St., Philadelphia. \$2.00.

"Agricultural Bacteriology." By Percival. Published by Duckworth & Co., 3 Henrietta St., Covent Garden, London, W. C., England. \$1.75.

"Microbiology." By Marshall. \$2.50.

"Bacteria, Yeasts and Molds in the Home." By Conn. \$1.00.

ENTOMOLOGY

**"Insect Pests of Farm, Garden & Orchard." By Saunderson. Published by Wiley Sons. \$3.00.

**"Insects Injurious to Fruits." By Saunders. Published by Lippincott. \$2.00.

"Insects Injurious to Vegetables." By Chittenden. Published by Orange Judd Co. \$1.50.

"Insects and Insecticides." By Weed. Published by Orange Judd Co. \$1.25.

"Manual of Fruit Insects." By Slingerland & Crosby. Published by Macmillan Co. \$2.00.

"Elementary Entomology." By Sander-son & Jackson. \$2.00.

"Insect Life." By Comstock. \$1.75.

"How to Know the Butterflies." By Comstock. \$2.25.

"Manual for Study of Insects." By Comstock. \$3.50.

CHEMISTRY

**"The Feeding of Crops and Stocks." By Hall. Published by John Murray, London. \$1.50.

"Fertilizers." By Voorhees. Published by Macmillan Co., New York.

"Agricultural Chemistry." By Fraps. Published by Chemical Publishing Co., Easton, Pa.

"The Soil." By Hall. Published by John Murray, London. \$1.50.

**"Elementary Household Chemistry." By Snell. Published by Macmillan Co. \$1.25.

"Chemistry of the Farm." By War-rington. 90 cents.

"Chemistry of Plant and Animal Life." By Snyder. \$1.50.

PHYSICS

"Physics of Agriculture." By F. H. King. Published by the Author. \$1.25.

**"A Text Book of Physics." By Millican & Gale. Published by Ginn & Co. \$1.25.

"Physics of the Household." By C. J. Lynde. Published by Macmillan Co. \$1.25.

"A Practical Arithmetic." By Stevens & Butler. Published by Chas. Scribner & Sons. 65 cents.

**"Rural Arithmetic." By Calfee. Published by Ginn & Co. 20 cents.

RURAL ECONOMICS

"Challenge of the Country." By Greene. \$1.25.

"Rural Life in Canada." By MacDougall \$1.00.

"Principles of Rural Economics." By Carver. \$1.30.

"Co-operation in Agriculture." By Powell. \$1.50.

AGRICULTURE

"Soil." By King. Published by Mac-millan Co., New York. \$1.50.

"Soil." By Hall. \$1.50.

"Beginnings in Agriculture." By Mann. 75 cents.

"Elements of Agriculture." By Warren. \$1.10.

AGRICULTURAL ENGINEERING

(A)

"Agricultural Engineering." By David-son. Published by Webb Publishing Co. \$1.50.

"Building Construction." Published by Webb Publishing Co., St. Paul, Minn. \$1.50.

"The Country Home." By Powell. Published by Webb Publishing Co., St. Paul \$1.50.

"Country Homes & Gardens." By Powell. Published by Webb Publishing Co., St. Paul, Minn. \$3.00.

"Framing." Radford Architectural Co., Chicago, Ill. \$1.00.

"Radford's Details of Building Construction." Radford Architectural Co., Chicago, Ill. \$1.00.

"Barn Plans and Outbuildings." Published by Webb Publishing Co., St. Paul, Minn. \$1.00.

"Ventilation of Buildings." Published by Webb Publishing Co., St. Paul, Minn. 75 cents.

"Silo Construction." By King. Published by Webb Publishing Co., St. Paul, Minn. 50 cents.

*For the practical man or average farmer.

(B) GASOLINE ENGINES

- "Traction Engines and Traction Engineering. Published by F. H. Drake & Co., Publishers, Chicago, Ill.
- "The Gasoline Engine on the Farm." Published by N. W. Henley Publishing Co., 132 Nassau St., New York. \$1.00.

(C) STEAM ENGINES

- "Instructions for Stationary and Traction Engineers." Webb Publishing Co., St. Paul. \$1.25.
- "Science of Successful Threshing." Published by J. I. Case Co., Winnipeg and Toronto. Free.

CONCRETE

- "What a Farmer can do with Concrete," (and 11 other booklets). Canada Cement Co., Montreal and Winnipeg. Free.
- "Roads, Paths and Bridges." By Page. Published by Webb Publishing Co., St. Paul. \$1.00.
- "Farm Blacksmithing." By Drew. Published by Webb Publishing Co., St. Paul. 50 cents.

MECHANICS

- "Home Water Works." By Lind. Published by Webb Publishing Co., St. Paul. \$1.00.
- "Home Waterworks." By Lynde. Published by Sturgis & Walton.
- "Practical Telephone Hand Book and Guide." Published by Drake & Co.

FLOWERS

- "Flowers and How to Grow Them." By Rexford. 50 cents.
- "Book of the Rose." By Mellier. \$1.75.
- "Daffodils and Narcissus and How to Grow Them." By Kerley. \$1.10.
- "Flower Garden." By Bennett. \$1.10.
- "Home Floriculture." By Rexford. \$1.00.
- "Vines and How to Grow Them." By McCullen. \$1.10.

APICULTURE

- "A B C of Bee-keeping." By Root. \$1.75.
- "The Honey Bee." By Langstroth. \$1.25.
- "Writings on Bees." By Alexander. 50 cents.

ENGLISH

- A good dictionary.
- "School of the Woods". By W. J. Long.
- "Animal Heroes." By E. Thompson Seton.
- "The Kindred of the Wild." By C. G. D. Roberts.
- "The Watchers of the Trails." By C. G. D. Roberts.
- "David Copperfield." By Charles Dickens.
- "Adam Bede." By George Eliot.
- "Old Mortality." By Scott.
- "Robinson Crusoe." By Defoe.
- "Pilgrim's Progress." By Bunyan.
- "Alice in Wonderland." By Lewis Carroll.
- "Flint and Feathers." By Pauline Johnson.
- "The Man from Glengarry." By Ralph Connor.
- "Songs of a Sourdough." By Service.
- Longfellow's Poems.

NEW PUBLICATIONS

THE DOMINION DEPARTMENT OF AGRICULTURE

THE EXPERIMENTAL FARMS

THE DIVISION OF FORAGE PLANTS

Forage Plants; Summary of Results. Prepared by the Dominion Astrologist and the superintendents of the branch experimental farms and stations, Bulletin, No. 84, of the Division of Forage Plants, supplies reports of results reached by a variety of tests at many points under differing conditions. In Indian corn, for instance, at the Central Experimental Farm, twelve varieties were tested, of which four, namely, Quebec Yellow, Windus Yellow Dent, Canada Yellow and Free Press, produced a comparatively

great number of ripe ears, but were low yielding as far as the tonnage of ensilage concerns. Tests of field roots and leguminous forage plants were made at the branches and stations in like manner, the results of which are set forth in this 35-page Bulletin. There are also included suggestions as to the varieties to grow and the crop production methods to follow, as deduced from the results of experimental work in the different provinces.

THE LIVE STOCK BRANCH

THE DIVISION OF SHEEP AND GOATS

The Angora Goat. Pamphlet No. 12, of the Sheep and Goat Division, is devoted to a general discussion of the methods of management, feeding and breeding of the

Angora Goat and particulars of mohair production, by T. Reg. Arkell, B.S.A., B.Sc., and Horace V. Bent, B.S. Turkey was the original home of the Angora and Turkey was formerly the largest source of supply of mohair. With Turkey at war the opportunity occurs for other countries to prove enterprising in this direction. Therefore this pamphlet is especially timely. South Africa some years ago took to breeding and raising the Angora, and has come to share largely in the mohair market. The United States has taken up the industry to some extent, but Canada has not so far done a great deal. Letters, however, published in this pamphlet show not only that this climate is adapted to the breed, but that the breed can be adapted to the climate. A short sketch of the early history of the Angora is followed in the Pamphlet, which consists of 22 pages with illustrations of types and of fleece at different periods, by details of the nature of the Angora and the treatment necessary to obtain the best and most profitable results. Although Turkey once had a virtual monopoly and still produces the finest quality of mohair, South Africa has become the greatest source of supply, producing 15,000,000 lb. of mohair, as against 10,000,000 lb. by the country in trouble and 6,000,000 lb. by the rest of the world.

THE PROVINCIAL DEPARTMENTS OF AGRICULTURE

QUEBEC

Maple Sugar and Maple Syrup Industry. In Circular, No. 2, of the Quebec Department of Agriculture, it is pointed out that in one year the value of the maple sugar and maple syrup produced in the province exceeded the value of the fruit gathered, the figures being, for maple sugar and syrup, \$1,680,393, and, for fruit, \$1,469,537. The circular contains practical advice to the makers of maple products.

Arboriculture. Under this title, the annual report for 1913-14 of the Branch of Fruit Tree Culture of Quebec has made its appearance. It is a 23-page red-covered publication with full page illustrations of fruit exhibits, demonstrations, crops and suitable buildings accompanying comprehensive descriptive reports of experiments and other operations at the different fruit stations in the province, and of the proceedings of the co-operative and horticultural societies.

ONTARIO

Agricultural and Household Science. In a 46-page blue book the Ontario Department of Education has issued rules and regulations for the establishment, organ-

ization and management of Agricultural and Household Science Departments in Continuation and High Schools and Collegiate Institutes. The conditions require the appointment of an Advisory Agricultural Committee of eight, to include four members of the school board and four resident ratepayers engaged in agricultural pursuits. The accommodation involves a special class-room for the study of agriculture and experimental plots. A work shop for manual training has also to be provided. The equipment necessary includes library, charts, lantern slides, garden tools and labels, models of apple boxes and barrels, microscopes and lenses, models of beehives, standard hen houses, scales, milk pails, creamery cans, thermometers, models of barns and pens, a work bench, tables, stoves, kitchen utensils, etc. The qualification required of teachers is set forth along with a descriptive list of studies and the expenditure that is necessary. Appendices outline a seasonal course in special agricultural subjects, and detail the equipment with cost of each article required in the agricultural and household science departments.

The Canadian Entomologist. The August number of *The Canadian Entomologist* contains the following articles: "Lice Affecting the Domestic Fowl," by A. W. Baker, Guelph, Ont.; "A New Hoplandothrips from British Guiana," by J. Douglas Hood, U. S. Biological Survey; "Mayflies of the Siphonurus Group," by Wilbert A. Clemens, Ithaca, N.Y.; "A Contribution Towards the Taxonomy of the Delphacidae," by F. Muir of the Sugar Planters' Experiment Station, Honolulu, and "On the Early Stages of Two Moths," by Wm. Barnes and J. McDunnough, Decatur, Ill. Descriptive plates accompany the articles.

The pure-bred live stock census for Ontario county, taken by the District Representative of the Department of Agriculture, figures as follows:

	Males	Females	Total
Clydesdales.....	97	367	464
Hackneys.....	11	12	23
Hackney ponies....	5	5	10
Welsh ponies.....	2	7	9
Shetland ponies....	2	11	13
Percherons.....	6	.....	6
Thoroughbreds.....	.....	1	1
Standard Bred.....	.....	1	1
Shorthorns.....	296	1012	1308
Holsteins.....	16	86	102
Jerseys.....	138	581	719
Herefords.....	3	5	8
Polled Angus.....	3	6	9
Shropshire sheep... 196	557	753	
South Downs sheep.	30	30	
Leicester sheep.....	1	27	28
Horn-Dorset sheep.. 35	113	148	
Berkshire Swine.... 17	44	61	
Yorkshire Swine.... 41	73	114	

MANITOBA

Meat and Its Substitutes. Circular No. 10 with this title is issued by the Extension Service of the Manitoba Agricultural College. It is of general public interest, giving receipts for the treatment of meat in various ways and of dishes that can be substituted of which eggs, beans, cheese, rice, tomatoes and macaroni are component parts.

Tree Pests and Cutworms. "Most of our elms are being deformed by these plant lice", says Circular No. 29, of the Extension Service of the Horticultural Department, Manitoba Agricultural College. The Circular gives methods of treatment for suppression.

Insect Poisons and Spray Mixtures. Circular No. 28, of the Extension Service, Botany Department, Manitoba Agricultural College, taking for its motto "Spraying is Plant Insurance", gives advice on methods of antagonism to the ravages of insects and disease, and to the inroads of weeds.

Poison Ivy and Other Poisonous Plants. Circular No. 12, of the Extension Service, Botany Department, Manitoba Agricultural College, furnishes counsel on the recognition of poison ivy, quoting "If leaves three, let it be", and as to what is to be done when rashness or ignorance has brought its hurt. It also treats of Cowbane, Poison Loco Weed, Sneezeweed and Spurge.

Fodder Corn in Manitoba. Circular No. 19, Extension Service Field Husbandry Department, Manitoba Agricultural College, by Jas. Bridge, B.S.A., tells the place in rotation of Indian corn, of preparation of the soil, time and methods of planting, quantity of seed per acre, summer cultivation, harvesting and the silo.

Hay and Pasture Crops in Manitoba. This is a 24-page illustrated Bulletin, issued by the Field Husbandry Department of the Provincial Agricultural College, that describes methods of cultivation of the five grasses most common to Manitoba, namely, Western Rye, Timothy, Brome, English Blue and Red Top, and of the various legumes—Alfalfa, Red Clover, Alsike Clover, White Dutch Clover—as well as corn, oats, peas, winter rye and millets, of which the best known and best suited to the West are Common and Hungarian.

BRITISH COLUMBIA

Management of Geese. Circular Bulletin, No. 12, of the live stock branch of the Department of Agriculture points out that

geese are both profitable and easy to handle. Toulouse and Embden are the most popular, but African and Chinese find favour. The circular gives full descriptions of the breeds and of their mating, housing, feeding and rearing.

The Home Vegetable Garden. Circular No. 24 of the Horticultural Branch of the provincial Department of Agriculture, dealing with vegetable growing in the southern interior sections of British Columbia, points out that in 1914 the province imported from other parts of Canada \$475,000 worth of fresh and canned vegetables and from foreign ports \$418,000 worth, all of which it is suggested could have been raised within the provincial borders. The Circular proceeds to give advice as to location, soil, fertilizers, plan of garden, irrigation, the hot-bed and cold frame, and cultural methods for some thirty different vegetables, the majority of which are common to other parts of Canada.

Reports of the B.C. Dairymen's Association. The annual reports for each of the two years ending December 31st, 1913, and 1914, of the British Columbia Dairymen's Association, has just been issued in one volume. The reports are the eighth and ninth yearly and contain not only the proceedings at the meetings, but also the awards made in a variety of competitions, including those in milk and cream, that took place in January this year at Vancouver. The constitution and by-laws, along with a list of members, are given.

Vegetable Crop Conditions. The following vegetable acreages in British Columbia compared with 1914, are given in Crop Report No. 3 of the Horticultural Branch:

Vegetable	1914	1915
	acres	acres
Potato.....	13,350	15,000
Onions.....	396	400
Tomatoes.....	455	280
Cabbage.....	215	225
Beans.....	580	575
Celery.....	70	58

MISCELLANEOUS

The Clydesdale Stud Book of Canada. Vol. XXIII of the Clydesdale Stud Book has just been issued from the office of the Canadian Live Stock Records. It contains records of pedigrees of stallions from 15,615 to 16,560, and, of mares, from 32,285 to 34,037. Besides the records, a list of officers past and present, rules of entry, minutes of the 28th annual meeting, very complete indices, a list of breeders and owners, and a full report of awards at the leading exhibitions from Edmonton, 1913, to Ottawa winter fair, 1915, are given.

Volume 40 of the American Hereford Record has just made its appearance. It covers the period from Jan. 2, 1914, to December 30, 1914, and contains a total of 25,000 entries. Half a million Herefords have been recorded since the establishment of the record in 1880.

The Agricultural Gazette of New South Wales for June, among a variety of articles mainly of entirely Australian interest contains an account of "A Visit to Dr. S. M. Babcock at the Wisconsin University", by H. W. Potts, F.C.S., F.L.S., Principal of Hawkesbury Agricultural College. It tells in brief the story of the origin of the test that bears the professor's name and the claim is made that its use became general in the factory system of Australia and New Zealand before it did in any other country, including both the United States and Canada. Notice is also given in the *Gazette* of the suspension for the year of examination of stallions owing to the vacancies in the veterinary staff caused by the war and the impossibility of finding substitutes.

The Minutes of the Annual and Directors' meetings of the Canadian Ayrshire Breeders' Association for 1915 have made their appearance in book form and they take, along with Ayrshire records, and other matters of interest to breeders, no fewer than 173 pages. Besides verbatim reports of the meetings referred to, a com-

plete record of performance by pure-bred Ayrshires is given along with the constitution, by-laws, rules of entry, scale of points, rules and regulations for record of performance, results of winter fair dairy tests and full list of members. A paper by John McKee, of Norwich, Ont., supplies details of a variety of interesting and valuable experiments.

"Swine Judging for Beginners" is the title of the July Bulletin of the extension service of the Ohio Agricultural College. The Bulletin gives just such elementary facts as every swine breeder needs at the outset to have at his finger's end.

Bulletin No. 3 of the Massachusetts Board of Education relates to State-Aided Vocational Agricultural Education in 1914. Four vocational agricultural schools and nine vocational agricultural departments in High Schools are now receiving aid from the state. Advisory committees of professional farmers take an active part in the management of those schools. Extension work is a feature. Conferences between instructors and experimental experts from the state agricultural college and representatives of the United States Department of Agriculture are held the last week in February and the last three days in July. Full descriptions of the school work and conference proceedings are given in the bulletin.

NOTES

The Department of Agriculture of New South Wales announce in their *Agricultural Gazette* for June, that the Department is prepared to test vegetable and farm crop seeds. After testing, reports will be given stating the germinating capabilities of the seed, its purity and the nature of the impurities, if any.

The Saskatchewan Department of Agriculture has issued a series of notices for the bulletin boards of the province regarding the Canada and Perennial Sow Thistles; live stock prices from June 1st to July 31st, and the advantages of early fall cultivation. Coloured plates of the exact appearance of the thistles, and an illustrated chart showing the difference between early and late cultivation, accompany the notices. The bulletin posting system of Saskatchewan, initiated by Captain A. F. Mantle, Deputy Minister of Agriculture, has been received with much favour.

When the farm woman has been aroused, the woman who on the little farm is striving to get the mortgage paid off so that she can do a little better for her children as they grow up, then that woman is going to go on, and on, in her thoughts, until her children shall make better farmers than their father, better men and women than their fathers and mothers, because they have had a better chance.—*A Woman Farmer.*

There was held in Chicago, on July 7th and 8th, a Banker-Farmer Conference. This gathering was organized and carried out by the Agricultural Commission of the American Bankers' Association whose platform is Citizenship—Co-operation—Better Schools—Better Roads—Farm Demonstrations—Better Tenancy Methods—Community Building—Farm Home and Town—Marketing and Distribution—Rural Credits—Soil Fertility.

Large shipments of potatoes from British Columbia have been made to Australia and the Fiji Islands.

The Deputy Minister of Agriculture for British Columbia has given notice to secretaries of fall fair associations that, owing to the necessity for economy, the department will only supply one judge for horses and cattle, one for poultry, and one for fruit and vegetables.

It was announced at a meeting of the British Columbia Fruit Growers' Association that the peach crop would probably be the greatest known in the Okanagan valley. The duties of three additional fruit inspectors appointed by the Dominion for the Okanagan and Kootenay districts will commence on August 1st. One inspector has been assigned to the Grand Forks and Kootenay district and the other two to the section of country extending from Salmon Arm to the boundary.

A plan to assist in breeding up live stock has been followed by many United States bankers with success. The banker buys pure bred cows and distributes them to farmers on a profit sharing contract. The farmer furnishes the feed and care, takes all the milk and divides the increase. Another plan is to buy a bull calf, turn it over to a farmer during two breeding seasons and then sell it. This is not philanthropy, it is good business. The calf that cost \$50 is sold for \$100 and perhaps more. The farmer takes no risk and is breeding up his herd.—*The Banker-Farmer*.

Two thousand one hundred dollars are to be distributed in prizes at a boys' and girls' "baby beef" contest in connection with the extension work of the Iowa State College. Several trips to the national capital, valued at \$100 each, and to the International Stock Show at Chicago are also to be offered as prizes. The awards will be announced at the Iowa State Fair in 1916. The contest will begin October 1st this year, when entries must be in and the calves must not be over 8 months old. Competitors must have been over 10 and under 19 years of age on 1st January, 1915. All records must be in the hands of the "state leader" immediately after 1st October, 1916, when the contest closes. The basis of awards will be: rate of gain, 40 per cent; economy of gain. 30 per cent; records kept and written report, 30 per cent. Premiums will also be offered at the state fair for "baby beeves" owned and exhibited by boys and girls.

English fruit crops are reported to be up to the average.

The Peach Growers' Publicity League has recently been organized with headquarters in New York city. A publicity campaign was to be commenced on August 25th and to continue until the end of September. Merchants have subscribed several thousand dollars to meet expenses.

Mr. Robert Newton, Director of Agricultural Education, New Brunswick, is taking a course in artillery work at the Kingston, Ontario, Military School. If the demand for men to go to the front continues, Mr. Newton, like many other agricultural officials, will go forward in the defence of the Empire.

The appointment is announced of J. Forsyth Smith as Canadian Fruit Trade Commissioner in England. Mr. Smith was formerly Prairie Fruit Markets Commissioner and attached to the Horticultural Branch of the British Columbia Department of Agriculture.

No one who reads at all widely the agricultural reports from the countries abroad can fail to be struck with the part women are taking in the re-direction of country life. Women are regenerating the rural schools. They are carrying out agricultural experiments. They are giving a lead in the matter of co-operation in rural home and community industries. They are banding themselves together to raise the standard of living in the country. What is most important of all, they are increasing the efficiency of the rural home

Dean J. H. Skinner of Purdue University, Indiana, in the course of an address at a Banker-Farmer Conference on "What the Bankers Can Do for Livestock Production", made the following statement: "I believe that the day will come in our larger banks, and many of our country banks, when the bank cannot afford to be without a man trained in agriculture, who not only looks over the farm to see whether it is worth the loan or not, but who goes about among the farmers and finds out what their methods, facilities and systems are, and who is in a position to give them information that will improve the farms and enable them to make wise use of money or credit, and to put them in touch with the best of information available."

"The Handbook for Export to South America" by H. R. Pousette, Canadian Trade Commissioner at Buenos Aires, supplies valuable information regarding the trade that Germany did with South American countries prior to the war. In 1914, the exports from that country amounted in value to \$187,433,668, of which only about \$2,000,000 represented products of the farm and garden.

According to the *Weekly Bulletin* of the Department of Trade and Commerce for August 9th, 1,021 heads of Canadian cattle have arrived in France. This, according to the report is a beginning of the importation by France of 100,000 live cattle that will be required to keep up the stock of the country which is being depleted by war conditions. Arrangements have been made whereby France is to receive from England 20,000 tons of frozen meat. In addition to this, there will be required from thirty thousand to forty thousand head of cattle to feed the army. The report says, "In connection with the import into France of Canadian cattle, it is interesting to note that 1,021 heads of Canadian cattle have already arrived at Saint Nazaire, all of which have given the utmost satisfaction in every respect. The French Government and the Parliamentary Agricultural Committee were both represented at the post of Saint Nazaire, where the Canadian cattle arrived, and everyone was greatly impressed with the quality of the animals imported from Canada, and especially of the favourable conditions under which the transportation of these animals was carried out. The general appreciation of this group of experts is, perhaps, best illustrated in the official report of the President of the Syndicate of Auction Traders at the Villet Stock Yards to the President of the Agricultural Committee."

The following is an excerpt from this report which shows the favourable light in which Canadian cattle are regarded in France:—

"The Parliamentary Committee ordered at Saint Nazaire, after landing, the slaughter of four animals, two Canadian and two American, which gave the following results:—

In the Programme of Studies for the Schools of Manitoba just issued considerable attention is outlined in agriculture and elementary science for Grades V to VIII and for the Secondary Schools.

The Deputy Minister of Agriculture for British Columbia has received an acknowledgement, through the Under-Secretary for the Colonies, of the second remittance from the Farmers' and Women's Institutes of the province for Belgian relief, amounting to \$617.

A circular issued by the British Columbia Fruit Growers' Association bears testimony to the value of advertising, on which \$5,000 was expended the first part of the fruit season. Thirty thousand copies of a 78-page booklet, containing useful information, including 225 fruit canning and preserving recipes, were printed and circulated gratuitously. The circular declares the booklet is the best advertising the association has yet had.

In the Educational Record of the province of Quebec Mr. Boucher De La Bruere, Superintendent of Education, in a letter to the Protestant Commissioners and Trustees of the Province on consolidation says: "One of the advantages of consolidation of the rural schools is that it furnishes a better opportunity for the introduction of Nature Study and Elementary Agriculture along the modern lines which are now proving effective in many parts of Canada and the United States. The Protestant Committee have taken steps to secure special training for all rural teachers in these subjects. The work is emphasized at Macdonald College, and lectures are to be given also at the Lachute Summer School to the teachers in training. The reproach that the schools too often educate the young people away from the farm must be removed. It can and should be demonstrated that there is a large body of sound knowledge to be imparted at the rural school which will have the result of attaching the capable youth in greater numbers to the noble life of the farm."

KIND:	Live Weight	Net Weight	Age	Leather Weight	Tallow Weight	Yield	Observations:
Canadian bullock	Kilos 610	Kilos 380	3	Kilos 41	Kilos 25	62 =	Meat of choice quality.
" cow	475	284	7	31	20	60 =	No waste.
American bullock	726	440	7	62	26	60 =	First class meat, but much too fat for consumption.
" cow	648	380	7	54	25	51 =	

Mr. Alexander Galbraith, formerly of Madison, Wis., and Brandon, Man., and a gentleman who for a quarter of a century and more has officiated as judge at leading shows in Canada and the United States, has accepted the position of Superintendent of Fairs and Institutes for Alberta. He has also been an extensive importer and shipper of heavy horses and Hackneys, and has been president of the American Clydesdale Association. At present he is under engagement to judge at the Panama Exposition in San Francisco. Mr. Galbraith has also had extensive experience as lecturer on agricultural subjects, especially in live stock breeding, at Wisconsin, Iowa, Illinois, Indiana and New York state agricultural colleges.

The Monthly Statistical Bulletin of New South Wales shows that in the ten months from July, 1914, to April, 1915, the export of butter had increased in value compared with the corresponding period of 1913-14 by £397,042 and that the export of wool had decreased by £3,595,917, of wheat and flour by £2,783,223 and other pastoral produce by £46,756. The grain harvest shows a shortage, compared with the estimate of 15,700,000 bushels made in November, of 2,900,000 bushels. Taking in the 1,400,000 bushels carried over by millers and farmers, a shortage in the requirements for the year is estimated at 300,000 bushels, which, however, is more than made up by stocks amounting to 1,200,000 bushels held by bakers, storekeepers and produce merchants.

"Never pick fruit when at all damp or wet, unless absolutely unavoidable, or unless the fruit will be in the consumers' hands within a very few hours", is the advice given in the Fruit Branch Circular issued by the Ontario Department of Agriculture. The importance of careful picking and handling of fruit is also pointed out. In California gloves are worn in order to avoid the slightest scratch, thus not only preserving the appearance of the fruit but also protecting it from that early decay to which all fruit with broken or bruised skins is subject. Extracts are given from the reports of the Royal Commission of Agriculture appointed by the British Columbia government, one of which points out the growing popularity of packing apples in boxes rather than in barrels.

The crop report committee of the Ontario Beekeepers' Association has received reports from three hundred members of the association situated in all parts of Ontario. These reports show an average of fifty-five pounds of honey per colony, which is stated to be about an average crop. The quality of the honey is reported to be excellent. Their report states that the market is clear of old honey and that a good demand is anticipated. The prices recommended by the committee are as follows:

No. 1, Light Extracted, wholesale, 10 to 11½ cents per lb.

No. 1, Light Extracted, retail, 12½ to 15 cents per lb.

No. 1, Comb, wholesale, \$2.00 to \$2.75 per dozen.

No. 2, Comb, wholesale, \$1.50 to \$2.00, per dozen.

These prices are f.o.b. in 60 lb., 10 lb. and 5 lb. tins; the first being net weight and the two latter being gross weight.

The Saskatchewan Farmer, published at Moose Jaw, prints on the inside of the back leaf a coupon, which farmers are asked to use in announcing their contribution of the product of a certain area of their wheat crop, to be applied to the Patriotic Acre Fund of the Saskatchewan Grain Growers' Association. The coupon is prepared in blank for farmers to fill in and forward to the Central Secretary of the Association at Moose Jaw. Referring to the Patriotic Acre Fund, the *Saskatchewan Farmer* for August states that about 22,000 of these forms are in the hands of the members of the Association, and that supplies of them will be mailed to others who wish to canvass on behalf of the Fund. Arrangements have been made with the Saskatchewan Co-operative Elevator Company, Limited, under which they will take all grain offered in connection with the scheme at full carload track price. It is announced that the grain will be milled in the province at the lowest possible cost to the Fund, the bran and middlings being retained in the province for sale to the members of the Saskatchewan Grain Growers' Association. Flour will be put up in specially prepared sacks, bearing the emblem of the Association, and will be transported to the coast by the train-load, it is anticipated, free of cost, and on arrival in England it will be presented to the Imperial Government as a free gift from the farmers of Saskatchewan, to be devoted to the relief of those in need, whether their nationality be British or Belgian.

INDEX TO PERIODICAL LITERATURE

- The Real Country Life School—the Consolidated School,
O. J. Kern, University of California, *The Banker Farmer*, Champaign, Ill., July, 1915, page 6
- The Cultivation of Corn—Facts from a Recent Investigation,
Prof. J. G. Mosier, University of Illinois, *The Banker Farmer*, Champaign, Ill., July, 1915, page 10.
- The Ass and the Mule,
H. W. Potts, Principal, Hawkesbury Agricultural College, *The Agricultural Gazette of New South Wales*, Sydney, July, 1915, page 553.
- An Hour with the Wool Grader,
The Nor-West Farmer, Winnipeg, July 5th, 1915, page 598.
- Features of Alberta Better Farming Special,
Farmer's Advocate, Winnipeg, July 21st, 1915, page 891.
- Harvesting, Palatability, Digestibility in Crops,
The Canadian Farm, Toronto, July 23rd, 1915, page 3
- Advertising the Products of the Farm,
Country Life in Canada, Winnipeg, August, 1915, page 5.
- Winter Injuries in 1915,
W. A. McCubbin, M.A., Field Secretary, Entomological Division, St. Catharines, Ont., *The Bee Keeper*, Peterboro, August, 1915.
- Fertilizers,
M. H. Dobbie, *British Columbia Fruit and Farm*, Vancouver, August, 1915, page 687.
- The Story of a Great Conference,
The Banker-Farmer, Champaign, Ill., August, 1915, page 1.
- Fitting a High School into a Community,
F. L. Cummings, Principal Flathead County High School, Kalispell, Mont., *The American School Board Journal*, Milwaukee, Wis., August, 1915, page 15.
- "Hothouse" Lambs in the Winter,
T. Reg. Arkell and Horace V. Bent, *The Weekly Sun*, Toronto, August 4th, 1915, page 5.
- The New Idea in Rural School Education,
Prairie Farm and Home, Regina, August 4th, 1915, page 2.
- Among the Alfalfa Fields,
J. H. McCulloch, *Farm and Ranch Review*, Calgary, August 5th, 1915, page 452.
- Rural Organization,
W. C. Good, Brant County, Ont., *Farmer's Advocate*, London, August 5th, 1915, page 1242.
- How the Ontario Farmer May Finance Himself. A Method of Using the Abundance of Credit which the Farmer has in Place of the Cash which he may not have,
F. C. Hart, B.S.A., Director Ontario Co-operation and Markets Branch, *The Canadian Countryman*, Toronto, August 7th, 1915, page 3.
- Apples the North-West Wants,
Elmer Lick, *The Canadian Countryman*, Toronto, August 7th, 1915, page 21.
- When to Sell Wheat,
Farmer's Advocate, Winnipeg, August 11th, 1915, page 975.
- How a Church Entered its Community Life,
Rev. W. W. Diehl, Illinois, *Prairie Farm and Home*, Regina, August 11th, 1915, page 2.
- Contagious Abortion in Cattle,
C. D. McGilvray, M.D.V., Winnipeg, *The Grain Growers' Guide*, Winnipeg, August 11th, 1915, page 14.
- Rural Church and School to Stimulate Agriculture,
Gordon Furrow, *The Globe*, Toronto, August 11th, 1915, page 11.
- Clean Water and How to Get it on the Farm,
Robert W. Trullinger, Washington, D.C., *Canadian Farm*, Toronto, August 13th, 1915, page 5.
- Care During the Moulting Period,
M. K. Boyer, *Canadian Fruit Grower and Farmer*, Grimsby, August 13th, 1915, page 5.
- Fertilizing Fall Wheat,
Daniel McKee, B.S.A., *Canadian Countryman*, Toronto, August 14th, 1915, page 7.
- Apple Growing in Evangeline's Land,
A. J. Campbell, Halifax County, N.S., *The Ohio Farmer*, Cleveland, Ohio, August 14th, 1915, page 1.
- Grain Inspection in the Prairie Provinces, (Grain Marketing Section) *Weekly Free Press and Prairie Farmer*, Winnipeg, August 18th, 1915, page 1.
- Survey of Canada's Crop,
Prairie Farm and Home, Regina, Sask., August 18th, 1915, page 21.
- The War and Migration to Canada,
Thos. E. Sedgwick, London, Eng., *Canadian Farm*, Toronto, August 20th, 1915, page 3.
- When the Nations Cry for Bread,
Prof. W. J. Squirrel, Ontario Agricultural College, Guelph, *Canadian Countryman*, Toronto, August 21st, 1915, page 3.

DIRECTORY OF THE DEPARTMENT OF AGRICULTURE.

Minister.....	The Honourable Martin Burrell.
Private Secretary.....	William Ide, B.A.
Deputy Minister.....	Geo. F. O'Halloran, B.A., B.C.L.
Assistant Deputy Minister and Secretary.....	Lt.-Col. A. L. F. Jarvis, I.S.O.
Commissioner of Agriculture.....	C. C. James, C.M.G., M.A., LL.D.
Chief Translator.....	C. E. Mortureux, B.S.A.

The Dominion Experimental Farms Branch. Director, J. H. Grisdale, B. Agr.

On the Central Experimental Farm and twenty Branch Farms and Stations distributed over Canada, conducts research and experiments in animal, field, orchard, garden and greenhouse husbandry, distributes superior seeds, analyzes and tests fertilizers and feeding stuffs, studies diseases of plants and administers ordinances for their control, and demonstrates what are of value.

The Dairy and Cold Storage Branch. Commissioner, J. A. Ruddick.

Encourages and assists in the development of the dairying industry and the improvement in the storage, transportation, sale and trade in agricultural products; administers the Dairy Industry Act (1914), the Cold Storage Act (1907), and the Cold Storage Warehouse Act (1914).

The Seed Branch. Commissioner, George H. Clark, B.S.A.

Encourages the production and use of superior seed, the production of farm and garden crops, tests seeds for farmers and seed merchants and administers the Seed Control Act.

The Live Stock Branch. Commissioner, John Bright.

Encourages and assists the development of the live stock industry.

The Health of Animals Branch. Veterinary Director General, Frederick Torrance, B.A., D.V.S.

Administers the Animals Contagious Diseases Act and the Meat and Canned Food Act. Protects Canadian live stock from contagious diseases.

Entomological Branch. Dominion Entomologist, C. Gordon Hewitt, D.Sc.

Conducts investigations on insects in relation to agriculture, encourages the use of methods of prevention and control and administers the Insects and Pests Section of the Destructive Insect and Pest Act.

The Fruit Branch. Commissioner, Donald Johnson.

Encourages the development of the fruit industry along commercial lines. Also administers Part IX of the Inspection and Sale Act, relating to fruit and fruit packages.

International Institute of Agriculture. Commissioner, T. K. Doherty, LL.B.

Supplies Institute at Rome statistics and official information respecting agriculture in Canada and distributes in Canada, in the Bulletin of Foreign Agricultural Intelligence, corresponding information from fifty-two adhering countries.

The Publications Branch. Editor and Chief, J. B. Spencer, B.S.A.

Distributes the publications of the Department and edits The Agricultural Gazette of Canada.

The Exhibition Branch Commissioner, Col. Wm. Hutchison.

Prepares and takes charge of Canada's buildings and exhibits at International Expositions.

University of Alberta Library



0 1620 0321 3251

